MLIE-102 RESEARCH METHODOLOGY

Q1. According to Webster's Third International Dictionary, what is the primary aim of research?
A) To establish new facts
B) To validate existing theories
C) To conduct experiments without a clear purpose
D) To summarize previous findings.

Correct Answer: A) To establish new facts
Explanation: Webster's definition emphasizes the discovery of new facts and their correct interpretation as a fundamental aim of research, along with the revision of accepted conclusions.

Q2. The Random House Dictionary defines research as a systematic inquiry into a subject to:
A) Invent new technologies
B) Discover or revise facts and theories
C) Gather popular opinions
D) Conduct random surveys.

Correct Answer: B) Discover or revise facts and theories
Explanation: The Random House Dictionary clearly states that research involves a systematic inquiry aimed at discovering or revising facts and theories, distinguishing it from casual or random investigations.

Q3. In the Encyclopedia of Social Sciences, research is defined as the manipulation of:
A) Random data
B) Concepts and symbols
C) Established laws
D) Public opinions.

Correct Answer: B) Concepts and symbols
Explanation: This definition focuses on manipulating things, concepts, or symbols for generalization, extending, correcting, or verifying knowledge, which is a core aspect of research.

Q4. Best and Kahn define research in education as:
A) A subjective analysis of experiences
B) A systematic and objective analysis of controlled observations
C) A casual exploration of educational trends
D) A collection of personal anecdotes

Correct Answer: B) A systematic and objective analysis of controlled observations
Explanation: Best and Kahn stress the importance of systematic and objective analysis in research, indicating that it leads to the development of generalizations and theories.

Q5. According to Busha in his publication on research methods in librarianship, research is characterized by:
A) Disciplined inquiry and structured investigations
B) Random data collection
C) A focus on personal interests
D) Casual observations.

Correct Answer: A) Disciplined inquiry and structured investigations
Explanation: Busha emphasizes that research is a systematic quest for knowledge, which involves disciplined inquiry and structured investigations, rather than informal or random approaches.

Q6. Cook describes research as an honest and exhaustive search for:
A) Quick solutions
B) Facts and their implications
C) Popular opinions
D) Anecdotal evidence.

Correct Answer: B) Facts and their implications
Explanation: Cook's definition highlights the importance of an honest and thorough search for facts and their meanings, underlining the serious nature of research.

Q7. Ranganathan emphasizes that research should:
A) Only confirm existing theories
B) Focus on practical applications
C) Be a critical and exhaustive investigation
D) Avoid new interpretations

Correct Answer: C) Be a critical and exhaustive investigation
Explanation: Ranganathan points out that research involves a critical examination to discover new facts and to interpret them considering existing theories and laws.

Q8. Which of the following is NOT a characteristic of research as summarized in the definitions?

A) Intellectual activity of a high order
B) Aims to discover data and facts
C) Conducted without peer review
D) Aims to formulate or revise theories and laws

Correct Answer: C) Conducted without peer review
Explanation: Peer review is a crucial aspect of research, as it ensures the communication of results for evaluation and validation, which is essential for adding new knowledge to the existing body of research.

Q9. According to Pandit Jawaharlal Nehru's Scientific Policy Resolution, what is the dominating feature of the contemporary world?
A) Political awareness
B) Intense cultivation of science
C) Agricultural advancement
D) Economic independence

Correct Answer: B) Intense cultivation of science
Explanation: Nehru emphasized the importance of large-scale scientific cultivation and its application to meet national requirements as a fundamental aspect of contemporary society.

Q10. What does the Scientific Policy Resolution (SPR) suggest is essential for providing reasonable material and cultural amenities?
A) Political strategy
B) Scientific approach and method
C) Economic planning
D) Cultural heritage

Correct Answer: B) Scientific approach and method
Explanation: The SPR articulates that a scientific approach and the use of scientific knowledge are vital for ensuring that all community members have access to essential amenities and services.

Q11. The term "STSK" in the context of socio-economic development stands for:
A) Science, Technology, and Social Knowledge
B) Science, Technology, and Strategic Knowledge
C) Social Theory and Systematic Knowledge
D) Scientific Technique and Societal Knowledge

Correct Answer: A) Science, Technology, and Social Knowledge
Explanation: STSK refers to the integrated approach that combines science, technology, and societal knowledge, emphasizing the importance of this mix in socio-economic development.

Q12. Which of the following best describes the significance of societal knowledge in the STSK framework?
A) It focuses solely on economic information.
B) It includes a diverse range of information such as political, legal, and health knowledge.
C) It emphasizes technological skills only.
D) It is irrelevant to socio-economic development.

Correct Answer: B) It includes a diverse range of information such as political, legal, and health knowledge.
Explanation: Societal knowledge encompasses a wide array of information that is essential for comprehensive socio-economic development, making it a crucial component of STSK.

Q13. The creation of R&D complexes and educational institutions in India aims to:
A) Increase industrial competition only
B) Foster a knowledge-based economy
C) Limit access to information
D) Preserve traditional knowledge

Correct Answer: B) Foster a knowledge-based economy
Explanation: The establishment of R&D complexes and educational institutions is aimed at enhancing the knowledge base, which is vital for the socio-economic development of the country.

Q14. Why has knowledge management become crucial for businesses and industries globally?
A) To maintain traditional practices
B) To combat competition and create new knowledge
C) To reduce research funding
D) To limit the dissemination of information

Correct Answer: B) To combat competition and create new knowledge
Explanation: Knowledge management is essential for organizations to stay competitive by fostering new knowledge creation and innovation, which is critical in today's rapidly changing market.

Q15. How has the accessibility of information through the Internet impacted research activities?
A) It has made research less relevant.
B) It has limited the availability of knowledge.
C) It has supported and enhanced research activities.
D) It has complicated the research process unnecessarily.

Correct Answer: C) It has supported and enhanced research activities.
Explanation: The availability of information via the Internet has facilitated research by providing easy access to data, resources, and knowledge, thereby enriching research activities.

Q16. What is the primary purpose of research as?
A) To maintain existing knowledge
B) To create a knowledge reservoir for socio-economic and cultural development
C) To focus solely on scientific advancements
D) To develop traditional skills only

Correct Answer: B) To create a knowledge reservoir for socio-economic and cultural development
Explanation: The main purpose of research is to build an infrastructure for generating new knowledge, which in turn aids in socio-economic and cultural development.

Q17. What is another term commonly used for Basic Research?
A) Operational Research
B) Empirical Research
C) Pure Research
D) Field Research

Correct Answer: C) Pure Research
Explanation: Basic Research is also known as Pure or Fundamental Research, focusing on gaining a deeper understanding of natural phenomena without immediate practical applications.

Q18. Which of the following statements best describes the focus of Basic Research?
A) Solving immediate practical problems
B) Acquiring knowledge for its own sake
C) Developing new technologies
D) Conducting experiments for commercial use

Correct Answer: B) Acquiring knowledge for its own sake
Explanation: Basic Research is primarily concerned with obtaining knowledge about phenomena, without necessarily focusing on practical applications soon.

Q19. Who typically conducts Basic Research?
A) Industry professionals
B) Academic institutions and intellectuals
C) Government agencies
D) Non-profit organizations

Correct Answer: B) Academic institutions and intellectuals
Explanation: Basic Research is often carried out by researchers at academic institutions who are dedicated to exploring theoretical aspects of a subject.

Q20. What is the primary aim of Applied Research?
A) To reformulate existing theories
B) To acquire knowledge for practical applications
C) To explore theoretical concepts without practical implications
D) To generate new theories unrelated to existing knowledge

Correct Answer: B) To acquire knowledge for practical applications
Explanation: Applied Research focuses on utilizing theoretical knowledge to solve specific practical problems, often leading to immediate development purposes.

Q21. Which of the following best describes Research and Development (R&D)?
A) Theoretical investigation without practical implications
B) A mix of basic and applied research aimed at innovation
C) A method solely focused on statistical analysis
D) An informal research process with no defined objectives

Correct Answer: B) A mix of basic and applied research aimed at innovation
Explanation: R&D combines both Basic Research and Applied Research, focusing on developing new products or processes based on theoretical and practical knowledge.

Q22. Which of the following is a key component of the research process applicable to both Basic and Applied Research?
A) Random sampling
B) Data collection
C) Marketing strategies
D) Customer feedback

Correct Answer: B) Data collection
Explanation: Data collection is an essential step in the research process, whether for Basic or Applied Research, as it provides the foundation for analysis and interpretation.

Q23. What is the significance of a conceptual framework in research?
A) It simplifies the research process by eliminating unnecessary steps.
B) It outlines the theoretical basis and structure for the research.
C) It ensures all research is conducted within a fixed timeframe.
D) It guarantees the success of the research outcome.

Correct Answer: B) It outlines the theoretical basis and structure for the research.

Explanation: A conceptual framework helps researchers organize their ideas, hypotheses, and variables, providing clarity and direction for the research process.

Q24. Which of the following components is NOT typically associated with the research process?
A) Hypothesis
B) Variables
C) Opinion polls
D) Generalizations

Correct Answer: C) Opinion polls

Explanation: While opinion polls may provide data, they are not fundamental components of the research process itself, which includes elements like hypotheses, variables, and generalizations.

Q25. What is the primary purpose of a hypothesis in research?
A) To summarize the research findings
B) To provide a tentative explanation of relationships between variables
C) To define the research methodology
D) To eliminate the need for data collection

Correct Answer: B) To provide a tentative explanation of relationships between variables

Explanation: A hypothesis is a formal statement predicting an outcome and offers a tentative explanation of the relationship between two or more variables, guiding the research process.

Q26. In the example "SDI services of an Information Centre are used by students of research and junior research scholars much more than senior researchers," what does "SDI" stand for?
A) Systematic Data Interpretation
B) Selective Dissemination of Information
C) Scientific Data Integration
D) Structured Data Inquiry

Correct Answer: B) Selective Dissemination of Information

Explanation: SDI stands for Selective Dissemination of Information, which refers to services that provide tailored information to specific users based on their needs.

Q27. Which of the following statements is true about variables in research?
A) Variables are always constant and do not change.
B) Variables are factors that can have varying values.
C) Only qualitative variables are important in research.
D) Independent variables cannot influence dependent variables.

Correct Answer: B) Variables are factors that can have varying values.

Explanation: Variables are elements of a research investigation that can take on different quantitative and qualitative values, playing a crucial role in measuring changes or differences.

Q28. What type of variable is users' needs in the context of evaluating library services?
A) Independent Variable
B) Dependent Variable

C) Qualitative Variable
D) Constant Variable

Correct Answer: B) Dependent Variable

Explanation: Users' needs are considered a dependent variable because they may vary based on other influencing factors in the evaluation of library and information services.

Q29. Which of the following best describes an independent variable?
A) A variable that remains unchanged throughout the study
B) A variable manipulated by the researcher to observe its effects
C) A variable that cannot be measured quantitatively
D) A variable that is solely qualitative

Correct Answer: B) A variable manipulated by the researcher to observe its effects

Explanation: An independent variable is deliberately changed or manipulated by the researcher to examine its effects on the dependent variable during an investigation.

Q30. What is the first step after formulating a hypothesis?
A) Collecting data systematically
B) Drawing conclusions
C) Presenting findings to peers
D) Identifying qualitative variables

Correct Answer: A) Collecting data systematically

Explanation: After formulating a hypothesis, the next crucial step is to collect data systematically to test the hypothesis for its validity.

Q31. Which of the following methods is used for analyzing qualitative data?
A) Statistical analysis
B) Content analysis
C) Mathematical modeling
D) Numerical comparison

Correct Answer: B) Content analysis

Explanation: Content analysis is a common method used for analyzing qualitative data, focusing on interpreting and understanding the meaning behind textual or visual information.

Q32. What is a tentative finding in the research process?
A) A definitive conclusion reached after analysis
B) An initial observation that may require further refinement
C) A validated theory that is widely accepted
D) A predetermined outcome of the research

Correct Answer: B) An initial observation that may require further refinement

Explanation: Tentative findings are preliminary observations that may need further analysis and refinement to arrive at a solid conclusion.

Q33. How can conclusions from research lead to generalizations?
A) By providing absolute certainties
B) Through the application of findings to similar problems
C) By ignoring the data collected
D) Through random assumptions

Correct Answer: B) Through the application of findings to similar problems

Explanation: Conclusions drawn from research can lead to generalizations when findings are applied to similar contexts or problems, enhancing the overall knowledge pool.

Q34. What does reliability in research refer to?
A) The presence of bias in research results
B) The stability and consistency of research methods and results
C) The ability to measure subjective opinions
D) The validity of the research conclusions

Correct Answer: B) The stability and consistency of research methods and results

Explanation: Reliability characterizes research methods, instruments, data, or results that are stable, consistent, and dependable.

Q35. Which term describes the ability of a procedure or device to measure the dimensions intended?

A) Reliability
B) Validity
C) Objectivity
D) Intuition

Correct Answer: B) Validity

Explanation: Validity is essential for the characteristics of entities, procedures, or devices used to measure intended dimensions in research.

Q36. What impact does personal bias have on research results?
A) It enhances the reliability of the findings
B) It does not affect the research outcomes
C) It can vitiate the results by introducing subjectivity
D) It makes the research more valid

Correct Answer: C) It can vitiate the results by introducing subjectivity

Explanation: Subjectivity can lead to personal bias, which may compromise the integrity of research results.

Q37. How is intuition described in the context of research?
A) As a method that guarantees accurate results
B) As an unimportant element of the research process
C) As a sudden idea that can solve research problems
D) As a formal technique to gather data

Correct Answer: C) As a sudden idea that can solve research problems

Explanation: Intuition plays an important role in research, as researchers may suddenly develop ideas that resolve issues hindering progress.

Q38. What is one characteristic of modern research?
A) It is always fast and efficient.
B) It is a highly intellectual and often slow process.
C) It guarantees absolute conclusions.
D) It is only conducted in academic institutions.

Correct Answer: B) It is a highly intellectual and often slow process.

Explanation: Modern research is characterized by being intellectually demanding, often taking a long time to complete and requiring dedication and effort.

Q39. What is the significance of knowledge growth and development in research?
A) It is unnecessary for improving living standards.
B) It ensures that research findings remain static.
C) It enhances human living standards through R&D.
D) It leads to immediate conclusions about knowledge.

Correct Answer: C) It enhances human living standards through R&D.

Explanation: The growth and development of knowledge through research and development (R&D) is essential for addressing problems related to sustaining and improving living standards.

Q40. Why is research considered a never-ending process?
A) Because it always leads to immediate solutions
B) Because new advances can invalidate previous findings
C) Because it is solely dependent on personal opinions
D) Because it can be concluded definitively

Correct Answer: B) Because new advances can invalidate previous findings

Explanation: Research is never-ending as any finding can become outdated or invalid due to new discoveries and advancements in knowledge.

Q41. How is science defined according to the text?
A) A collection of random facts and opinions
B) A body of knowledge showing operations of general laws and systematized knowledge
C) A subjective interpretation of various disciplines
D) A method of solving problems without empirical testing

Correct Answer: B) A body of knowledge showing operations of general laws and systematized knowledge

Explanation: Science is characterized as a body of systematized knowledge that reveals the operations of general laws relevant to various disciplines.

Q42. What does the scientific method involve according to the Random House Dictionary?
A) Identifying a problem and proposing solutions without testing
B) Identifying a problem, gathering data, formulating,

and testing a hypothesis
C) Gathering random data and presenting it without analysis
D) Conducting research based on personal beliefs and opinions

Correct Answer: B) Identifying a problem, gathering data, formulating, and testing a hypothesis

Explanation: The scientific method is defined as a structured approach that includes identifying a problem, gathering relevant data, formulating a hypothesis, and empirically testing it.

Q43. Which of the following is NOT a step in the scientific method?
A) Review of relevant literature
B) Collection of established facts and figures
C) Making assumptions without evidence
D) Testing the hypothesis based on research design

Correct Answer: C) Making assumptions without evidence

Explanation: Making assumptions without evidence is not a step in the scientific method; the method relies on empirical testing and data collection.

Q44. What is the purpose of reviewing relevant literature in the scientific method?
A) To support personal opinions
B) To assess what has already been done in the research topic
C) To ignore previous findings
D) To formulate a hypothesis without evidence

Correct Answer: B) To assess what has already been done in the research topic

Explanation: Reviewing relevant literature helps researchers understand existing work related to their research topic, which informs their study.

Q45. According to Ranganathan, how is scientific method characterized?
A) As a linear and straightforward process
B) As a cyclic process where procedures are repeated
C) As a random approach to solving problems
D) As an unstructured method of inquiry

Correct Answer: B) As a cyclic process where procedures are repeated

Explanation: The scientific method is viewed as a cyclic process, with procedures being repeated in every round of study to refine research.

Q46. What is the final step in the scientific method as?
A) Formulating new hypotheses
B) Dissemination for peer review
C) Making conclusions without analysis
D) Ignoring feedback from peers

Correct Answer: B) Dissemination for peer review

Explanation: The final step in the scientific method is the dissemination of research results for peer review, ensuring the findings are evaluated by other experts in the field.

Q47. According to Ranganathan, how does the Scientific Method operate?
A) It is a straightforward linear process.
B) It makes intellection pursue any discipline in a never-ending succession of cycles.
C) It involves only the formulation of hypotheses.
D) It relies solely on intuition without empirical testing.

Correct Answer: B) It makes intellection pursue any discipline in a never-ending succession of cycles.

Explanation: Ranganathan describes the Scientific Method as a cyclical process, where intellection continuously cycles through disciplines.

Q48. Which of the following is NOT a type of law mentioned in Ranganathan's Spiral of Scientific Method?
A) Fundamental laws
B) Deduced laws
C) Empirical laws
D) Theoretical laws

Correct Answer: D) Theoretical laws

Explanation: The types of laws in Ranganathan's Spiral include fundamental laws, deduced laws, and empirical laws, but not theoretical laws.

Q49. What characterizes Quadrant I of the Spiral of Scientific Method?
A) Use of advanced intellect and deduction.
B) Primary senses are used, along with observations of knowers.
C) Formulation of fundamental laws.
D) Collection of empirical laws through statistical calculations.

Correct Answer: B) Primary senses are used, along with observations of knowees.

Explanation: Quadrant I focuses on using primary senses for observations and finding facts.

Q50. In which quadrant is inductive logic primarily utilized to formulate empirical laws?
A) Quadrant I
B) Quadrant II
C) Quadrant III
D) Quadrant IV

Correct Answer: B) Quadrant II

Explanation: Quadrant II involves using intellect and inductive logic to formulate empirical laws based on accumulated facts.

Q51. What is a key activity in Quadrant III of Ranganathan's Spiral?
A) Formulating empirical laws.
B) Progression towards ultimate generalization and abstractness.
C) Using primary senses for observation.
D) Deriving deducted laws with machinery.

Correct Answer: B) Progression towards ultimate generalization and abstractness.

Explanation: Quadrant III focuses on the intuition that leads to generalization and the recording of fundamental laws.

Q52. Which statement is true about Quadrant IV?
A) It corresponds to the use of primary senses for observation.
B) It involves progression towards concreteness and deduction of laws.
C) It is where empirical laws are formulated.
D) It relies solely on intuition without intellect.

Correct Answer: B) It involves progression towards concreteness and deduction of laws.

Explanation: Quadrant IV emphasizes the use of intellect and deductive reasoning to derive and record laws.

Q53. What happens during the process of re-entering the spiral of scientific method?
A) New hypotheses are generated without testing.
B) Observations and experiments verify new deduced laws.
C) The spiral comes to a complete stop.
D) Only subjective observations are considered.

Correct Answer: B) Observations and experiments verify new deduced laws.

Explanation: Re-entering the spiral involves verifying the validity of new deduced laws through observations and experiments.

Q54. What leads to the continuation of movement in the spiral of scientific method?
A) Verification of old laws
B) Appearance of new empirical facts contradicting fundamental laws
C) Conducting experiments without observations
D) Reliance on subjective data

Correct Answer: B) Appearance of new empirical facts contradicting fundamental laws

Explanation: The movement in the spiral continues when new empirical facts appear that contradict existing fundamental laws.

Q55. Why is the scientific method more easily applied to natural sciences?
A) Natural sciences do not require observations.
B) Natural sciences can use subjective data.
C) Observations can be impersonal and experiments can be unhindered.
D) There are fewer mathematical calculations involved.

Correct Answer: C) Observations can be impersonal and experiments can be unhindered.

Explanation: The nature of natural sciences allows for objective observations and unhindered experiments, facilitating the application of the scientific method.

Q56. According to Pauline V. Young, what is one of the primary goals of social research?
A) To create theoretical models without data
B) To discover new facts or verify and test old facts
C) To ignore the relationship between social phenomena
D) To solely focus on quantitative data

Correct Answer: B) To discover new facts or verify and test old facts

Explanation: Social research aims to discover new facts and verify existing ones using logical and systematic techniques.

Q57. What is a limitation of research in social sciences?
A) Social phenomena are always accurately observable.
B) Social research is completely objective.
C) Social phenomena are not amenable to accurate observations like natural sciences.
D) There is no need for systematic techniques in social research.

Correct Answer: C) Social phenomena are not amenable to accurate observations like natural sciences.

Explanation: Research in social sciences faces limitations due to the subjective nature of social phenomena, which cannot always be accurately observed.

Q58. What is one of the aims of social research?
A) To create knowledge without understanding human behavior
B) To discover laws of human behavior that are final and absolute
C) To clarify doubts and correct misconceptions about social life
D) To ignore causal relationships in social phenomena

Correct Answer: C) To clarify doubts and correct misconceptions about social life

Explanation: Social research seeks to explain unexplained phenomena and clarify doubts about social life, aiding in knowledge construction.

Q59. In which field is research applied with limitations like social sciences?
A) Natural sciences
B) Engineering
C) Library and information science
D) Pure mathematics

Correct Answer: C) Library and information science

Explanation: Research in library and information science faces similar limitations as social sciences but has still produced valuable work in various areas.

Q60. How is the spiral of the scientific method characterized in terms of its nature?
A) It is closed-ended with limited application.
B) It is open-ended with unlimited scope for various rounds.
C) It stops once all data is collected.
D) It only applies to natural sciences.

Correct Answer: B) It is open-ended with unlimited scope for various rounds.

Explanation: The spiral of scientific method is open-ended, allowing for continuous exploration and application across different fields.

Q61. What is the general meaning of design in the context of research?
A) Random arrangement of elements
B) Organizing structural forms of elements with a purpose in view
C) Detailed explanation of findings
D) Only collecting data without planning

Correct Answer: B) Organizing structural forms of elements with a purpose in view

Explanation: Design in research refers to organizing elements in a structured way to achieve a specific purpose.

Q62. According to Ghosh (1984), research design is defined as:
A) A random collection of data
B) A plan of the proposed research work
C) The outcome of the research
D) A simple overview of the subject

Correct Answer: B) A plan of the proposed research work

Explanation: Research design serves as a plan outlining the proposed research work.

Q63. What does Kerlinger state about research design?
A) It is irrelevant to data collection methods.
B) It is the final step of research.
C) It is only concerned with qualitative research.
D) It includes logistical problems primarily.

Correct Answer: A) It is irrelevant to data collection methods.

Explanation: Kerlinger emphasizes that research design is separate from the method of data collection.

Q64. What is the primary function of a research design?
A) To delay the research process
B) To ensure evidence obtained answers the research question as unambiguously as possible
C) To ignore the significance of variables
D) To collect data without analysis

Correct Answer: B) To ensure evidence obtained answers the research question as unambiguously as possible

Explanation: The function of research design is to obtain clear evidence that addresses the research question.

Q65. Which of the following is NOT a component of a research design?
A) Statement of the problem
B) Method of data collection
C) Conclusion of the research
D) Analysis and interpretations

Correct Answer: C) Conclusion of the research

Explanation: While conclusions are part of the research process, they are not a specific component of the research design.

Q66. In the example provided, what is the working hypothesis related to collection building in a research library?
A) Users do not influence collection building.
B) The professional staff with maximum contact will select items that circulate most frequently.
C) Library circulation is irrelevant to collection building.
D) All materials will be selected randomly without user input.

Correct Answer: B) The professional staff with maximum contact will select items that circulate most frequently.

Explanation: The working hypothesis suggests that professional staff will choose items based on user interaction.

Q67. What is the significance of the investigation in the research design example?
A) To create random guidelines
B) To build the most useful collection for the library
C) To disregard user needs
D) To collect data without a hypothesis

Correct Answer: B) To build the most useful collection for the library

Explanation: The investigation aims to provide guidelines for creating an effective library collection.

Q68. Which variable is considered independent in the example related to research library collection building?
A) User needs
B) Library professional staff
C) Selection of materials
D) Circulation frequency

Correct Answer: C) Selection of materials

Explanation: The selection of materials is identified as the independent variable influencing the research outcome.

Q69. What is the role of controlling variables in research design?
A) To make the research subjective
B) To collect evidence on one variable while keeping others constant
C) To ignore the significance of different variables
D) To solely focus on qualitative data

Correct Answer: B) To collect evidence on one variable while keeping others constant

Explanation: Controlling variables helps in obtaining reliable data for analysis and interpretation.

Q70. Which element is included in the composition of a research design?
A) Conclusion of previous research
B) Personal opinions of the researcher
C) Time scheme for the research
D) Financial losses from previous projects

Correct Answer: C) Time scheme for the research

Explanation: A time scheme is part of the research design to plan the duration of the research process.

Unit 2 HISTORICAL RESEARCH

Q71: What is the primary focus of historical research?
A) To collect data related to current events
B) To systematically collect and evaluate data related to past occurrences
C) To conduct experiments in controlled environments
D) To develop new hypotheses without prior data
Correct Answer: B) To systematically collect and evaluate data related to past occurrences

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Q72: According to Isaac and Michael, historical research involves which of the following processes?
A) Randomly collecting facts
B) Systematically and objectively reconstructing the past
C) Only verifying existing facts
D) Observing present events without historical context
Correct Answer: B) Systematically and objectively reconstructing the past

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Q73: Which definition highlights the role of hypotheses in historical research?
A) Historical research as a mere description of past events
B) Historical research as the process of collecting and evaluating data
C) Gay's definition of historical research
D) Johnson's definition of historical research
Correct Answer: C) Gay's definition of historical research

Q74: True historical research is concerned with:
A) Merely documenting dates and events
B) Analyzing and interpreting the meanings of historical events
C) Collecting random facts without context
D) Establishing new methodologies in research
Correct Answer: B) Analyzing and interpreting the meanings of historical events

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Q75: What distinguishes true historical research from chronology?
A) Chronology does not involve any collection of data
B) Chronology merely lists events in order without interpretation
C) Chronology is more analytical than historical research
D) Chronology requires experimental verification
Correct Answer: B) Chronology merely lists events in order without interpretation

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Q76: Which of the following is NOT considered historical research?
A) A detailed narrative of past events
B) A mere collection of facts
C) An analysis of historical trends
D) A synthesis of evidence relating to past events
Correct Answer: B) A mere collection of facts

Q77: What is one of the key advantages of historical research?
A) It allows for direct experimentation with subjects
B) It provides context for understanding current

practices
C) It eliminates the need for document evaluation
D) It solely relies on modern data sources
Correct Answer: B) It provides context for understanding current practices

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Q78: Which of the following best describes a limitation of historical research?
A) It cannot use documents for analysis
B) The past can only be interpreted through available relics
C) Historical research is always objective
D) It requires extensive fieldwork
Correct Answer: B) The past can only be interpreted through available relics

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Q79: One of the purposes of historical research is to:
A) Predict future events without context
B) Discover unknown past events
C) Establish new facts without verification
D) Create timelines of present occurrences
Correct Answer: B) Discover unknown past events

Q80: How does historical research help understand the relationship between past and present?
A) By documenting current trends
B) By identifying historical patterns that shape current events
C) By disregarding past events
D) By focusing solely on present phenomena
Correct Answer: B) By identifying historical patterns that shape current events

Q81: According to Hillway (1964), which of the following is NOT a type of historical research?
A) Biographical research
B) The investigation of sources and influences
C) The creation of fictional narratives
D) Compiling bibliographies
Correct Answer: C) The creation of fictional narratives
Explanation: Hillway identifies six specific types of historical research, and creating fictional narratives is not included in these categories. The types listed focus on factual investigations and documentation of history.

Q82: Which type of historical research focuses on the history of organizations and institutions?
A) Biographical research
B) Histories of institutions and organisations
C) Studying the history of ideas
D) Editing and translating historical documents
Correct Answer: B) Histories of institutions and organizations
Explanation: This type of research involves documenting and analyzing the development and significance of specific organizations and institutions over time.

Q83: What factor influences a researcher's approach to collecting and interpreting data in historical research?
A) The geographic location of the researcher
B) The specific research question being addressed
C) The school of thought the researcher belongs to
D) The availability of funding for the research
Correct Answer: C) The school of thought the researcher belongs to
Explanation: A researcher's perspective, such as providential perspective or narrative mode, shapes how they collect and interpret historical data.

Q84: According to Michael Harris, understanding the historical definition of library functions can lead to:
A) Increased funding for libraries
B) Improved communication between libraries
C) The elimination of libraries
D) More rigorous historical research
Correct Answer: B) Improved communication between libraries
Explanation: Harris suggests that historical knowledge helps libraries communicate effectively,

as it fosters a clearer understanding of their roles and functions.

Q85: How does historical research contribute to the understanding of libraries today?
A) By providing fictional accounts of library operations
B) By documenting only recent changes in libraries
C) By enabling librarians to learn from past mistakes and successes
D) By eliminating the need for modern library services
Correct Answer: C) By enabling librarians to learn from past mistakes and successes
Explanation: Historical research offers insights into previous errors and achievements, helping librarians avoid repeating mistakes and build on successes.

Q86: What has caused a decline in the popularity of historical research in LIS according to Shiflett (1984)?
A) Lack of interest in library history
B) The perception that historical research is a waste of effort
C) Increased funding for historical projects
D) The rise of digital libraries
Correct Answer: B) The perception that historical research is a waste of effort
Explanation: Shiflett highlights a prevailing belief among some academic committees that historical research lacks rigor compared to methodologies derived from social sciences.

Q87: What does the study of library history provide to library professionals?
A) An irrelevant background
B) Significant details about library origins and developments
C) A guide for fictional storytelling
D) Solely information about current technology
Correct Answer: B) Significant details about library origins and developments
Explanation: Library history offers essential insights into how libraries have evolved, their significance, and the development of their collections over time.

Q88: In what way has the quality of historical research in LIS changed over time?
A) It has become less rigorous than before
B) It has remained constant without improvement
C) It has improved, incorporating more scientific methods
D) It has focused solely on modern methods
Correct Answer: C) It has improved, incorporating more scientific methods
Explanation: Historical research in LIS has become more rigorous and methodical, often incorporating scientific approaches at various research stages.

Q89: What purpose does historical research serve when investigating the history of libraries?
A) To replace modern library practices
B) To provide a comprehensive understanding of the cultural context of libraries
C) To create fictional narratives about libraries
D) To analyze current library technology
Correct Answer: B) To provide a comprehensive understanding of the cultural context of libraries
Explanation: Understanding the historical context of libraries enriches the comprehension of their roles in culture and society, allowing for better appreciation of present functions.

Q90: Historical research is considered a major research methodology in LIS because it:
A) Is the only method available
B) Offers insights into historical trends affecting libraries
C) Focuses solely on current trends
D) Is the easiest form of research
Correct Answer: B) Offers insights into historical trends affecting libraries
Explanation: Historical research plays a significant

role in LIS by shedding light on past developments that shape current library practices and trends.

Q91: What is the primary basis for historical research?
A. Speculation
B. Evidence
C. Opinion
D. Assumptions

Correct Answer: B. Evidence
Explanation: Historical research relies on evidence from the past, which is crucial for establishing facts and understanding historical contexts.

Q92: What factors can affect the authenticity and accuracy of historical sources?
A. Technological advancements
B. Economic, political, ethical, and social environments
C. Historical significance
D. Personal interests

Correct Answer: B. Economic, political, ethical, and social environments
Explanation: These factors can influence the presentation and interpretation of information in historical sources, impacting their reliability.

Q93: Which of the following is NOT a criterion for evaluating historical sources?
A. Authority
B. Popularity
C. Scope
D. Objectivity

Correct Answer: B. Popularity
Explanation: While authority, scope, and objectivity are important criteria for evaluating sources, popularity does not necessarily reflect their quality or reliability.

Q94: Why is it important for a historian to sift through evidence carefully?
A. To find the most recent publications
B. To narrow down relevant information and avoid surprises
C. To ensure the sources are popular
D. To include as many sources as possible

Correct Answer: B. To narrow down relevant information and avoid surprises
Explanation: Careful sifting helps historians focus on pertinent evidence and recognize unexpected insights that could influence their research.

Q95: What does the 'authority' criterion assess when evaluating a source?
A. The reputation of the publisher
B. The extent of coverage of topics
C. The opinions of the readers
D. The reliability of the information

Correct Answer: A. The reputation of the publisher
Explanation: Evaluating the authority of a source involves assessing the qualifications and reputation of the author and publisher to ensure credibility.

Q96: How can a researcher determine the 'uptodatedness' of a source?
A. By checking the author's biography
B. By looking for the publication date or last update
C. By evaluating the number of citations
D. By reviewing the bibliographies

Correct Answer: B. By looking for the publication date or last update
Explanation: The currency of information is crucial, especially in rapidly changing fields, and knowing when a source was published or updated helps assess its relevance.

Q97: What does the 'reliability' criterion focus on?
A. The breadth of topics covered
B. The popularity of the source

C. The accuracy and freedom from errors
D. The length of the documentation

Correct Answer: C. The accuracy and freedom from errors
Explanation: Reliability involves checking the information's correctness and whether it has been verified or edited to prevent the dissemination of misinformation.

Q98: What should a researcher consider regarding the 'objectivity' of a source?
A. The visual appeal of the source
B. Whether there is bias in the presentation of information
C. The author's writing style
D. The number of sources cited

Correct Answer: B. Whether there is bias in the presentation of information
Explanation: Objectivity is vital for ensuring that the information presented is balanced and not skewed towards a particular ideology or perspective.

Q99: Why is it necessary to use a variety of sources in historical research?
A. To make the research look extensive
B. To gather opinions from various perspectives
C. To ensure comprehensive and accurate understanding
D. To support personal biases

Correct Answer: C. To ensure comprehensive and accurate understanding
Explanation: Using diverse sources enriches the research and provides a well-rounded view, which is crucial for valid conclusions in historical analysis.

Q100: What is the main danger of using unfiltered information from the Internet?
A. It is usually outdated
B. It may lack proper documentation
C. It can be inaccurate and unverified
D. It is too easy to access

Correct Answer: C. It can be inaccurate and unverified
Explanation: Unfiltered Internet sources often lack editorial oversight, leading to the risk of spreading false or misleading information.

Unit 3 Survey Research

Q101: What is the main purpose of survey research?
A. To analyze historical data
B. To describe the current state-of-the-art or ground realities
C. To predict future events
D. To test laboratory hypotheses

Correct Answer: B. To describe the current state-of-the-art or ground realities
Explanation: Survey research aims to study and describe the present situation by collecting relevant facts and data.

Q102: Which of the following is an example of a large-scale descriptive survey?
A. Study of one university library's cataloging system
B. Study of circulation systems in all public libraries of a city
C. Analysis of a single library's reference service
D. Study of one library's user satisfaction

Correct Answer: B. Study of circulation systems in all public libraries of a city
Explanation: A survey becomes large-scale when it involves multiple libraries, institutions, or a wide geographical area, such as all public libraries in a city.

Q103: Which method is NOT mentioned as a technique for data collection in surveys?
A. Direct observation

B. Experimentation
C. Structured printed questionnaire
D. Telephone interviews

Correct Answer: B. Experimentation
Explanation: Experimentation is not used in surveys, which focus on observational and questionnaire-based data collection methods.

Q104: What is the role of sampling in survey research?
A. To increase the margin of error
B. To ensure accurate representation of the entire population
C. To reduce the research time
D. To exclude specific subgroups from the population

Correct Answer: B. To ensure accurate representation of the entire population
Explanation: Sampling is used to create a miniature version of the entire population to represent it accurately, making the research results generalizable.

Q105: What is a characteristic of probability sampling?
A. It is non-random and biased
B. Every element has an equal chance of being included
C. It depends on the researcher's convenience
D. It has a high margin of error

Correct Answer: B. Every element has an equal chance of being included
Explanation: Probability sampling is designed to ensure that each element in the population has a known and equal chance of being selected.

Q106: Which type of sampling involves selecting items due to the researcher's convenience?
A. Systematic sampling
B. Probability sampling
C. Stratified sampling
D. Non-probability sampling

Correct Answer: D. non-probability sampling
Explanation: Non-probability sampling is based on convenience rather than randomness, making it more prone to biases.

Q107: What is the main drawback of non-probability sampling?
A. It requires a large population
B. It has a higher margin of error and can be biased
C. It is too expensive to conduct
D. It cannot be used for qualitative research

Correct Answer: B. It has a higher margin of error and can be biased
Explanation: Non-probability sampling lacks the systematic approach of probability sampling, leading to potential biases and errors.

Q108: Which type of sampling would be suitable if every 10th member of a population is chosen systematically?
A. Random sampling
B. Non-probability sampling
C. Systematic sampling
D. Cluster sampling

Correct Answer: C. Systematic sampling
Explanation: Systematic sampling involves selecting every nth member of a population systematically, ensuring a structured method of selection.

Q109: What is a key characteristic of a library survey?
A. It is limited to one specific library activity
B. It systematically collects data on multiple libraries or a large library system
C. It focuses only on user satisfaction
D. It excludes operational data

Correct Answer: B. It systematically collects data on multiple libraries or a large library system
Explanation: Library surveys are broad in scope and cover various activities, operations, and services across multiple libraries or an entire region.

Q110: What does 'Margin of Error' in sampling refer to?
A. The cost of conducting the survey
B. The possibility of inaccuracies in the sampling results
C. The time taken to complete the sampling process
D. The influence of survey participants' opinions

Correct Answer: B. The possibility of inaccuracies in the sampling results
Explanation: The margin of error indicates the degree of potential error in sampling results, representing the extent to which the sample may differ from the entire population.

Q111: What should be the first step when conducting a survey?
A. Choosing a target population
B. Formulating the problem clearly
C. Preparing a questionnaire
D. Analyzing the data collected

Correct Answer: B. Formulating the problem clearly
Explanation: The first step in conducting a survey is to clearly define and formulate the research problem, including its scope and parameters.

Q112: Why is it important to pretest a questionnaire on a small population?
A. To test the researcher's patience
B. To identify any potential issues or ambiguities
C. To increase the sample size
D. To ensure the use of complex language

Correct Answer: B. To identify any potential issues or ambiguities
Explanation: Pretesting helps in identifying any flaws, ambiguities, or misunderstandings in the questionnaire before it is used on a larger scale.

Q113: What attitude should a researcher adopt while recording verbal answers?
A. Neutral and detached
B. Critical and questioning
C. Defensive and confrontational
D. Persuasive and engaging

Correct Answer: A. Neutral and detached
Explanation: A researcher should remain neutral, detached, and disinterested in the outcomes to avoid bias and faithfully record respondents' opinions.

Q114: Which of the following is NOT a reason for non-cooperation from respondents?
A. Lack of time
B. Fear of revealing information
C. Lack of interest
D. High incentives offered

Correct Answer: D. High incentives offered
Explanation: High incentives would usually encourage participation, not lead to non-cooperation.

Q115: What is a major disadvantage of outsourcing data collection?
A. It is too time-consuming
B. It can result in unreliable data
C. It eliminates the need for surveys
D. It reduces survey costs

Correct Answer: B. It can result in unreliable data
Explanation: Outsourcing may lead to unreliable or fabricated data, depriving the researcher of firsthand experience.

Q116: What is considered an acceptable response rate in survey research?
A. 10%

B. 20%
C. 40%
D. 80%

Correct Answer: C. 40%
Explanation: A response rate of 40% is considered sufficient in survey research, though not high.

Q117: Why might respondents provide deliberate wrong information?
A. To extend the survey period
B. Due to ambiguous questions or misinterpretation
C. To support the researcher's hypothesis
D. To increase the sample size

Correct Answer: B. Due to ambiguous questions or misinterpretation
Explanation: Ambiguously worded questions can lead to misinterpretations, resulting in respondents giving incorrect answers, sometimes intentionally.

Q118: What is a natural tendency of human beings when responding to surveys?
A. To reveal personal information freely
B. To show only the ideal or bright side of themselves
C. To refuse to answer any questions
D. To always give accurate information

Correct Answer: B. To show only the ideal or bright side of themselves
Explanation: Respondents tend to present themselves in a favorable light, often exaggerating their positive behaviors or accomplishments.

Q119: How should a researcher deal with unclear or ambiguous answers?
A. Ignore them completely
B. Accept them as valid responses
C. Attempt to cross-verify or ask for clarification
D. Replace them with the most likely answer

Correct Answer: C. Attempt to cross-verify or ask for clarification
Explanation: Cross-verification or seeking clarification can help ensure the validity of responses and reduce ambiguity.

Q120: Why might official records sometimes be unreliable in a survey?
A. They are too detailed
B. They are based on outdated sources
C. They may be manipulated to show higher performance
D. They are not accessible to researchers

Correct Answer: C. They may be manipulated to show higher performance
Explanation: Official records can sometimes be manipulated to depict a better performance than reality, which can mislead researchers.

Q121: What are the two main approaches to conducting observations?
A. By using cameras and notebooks
B. By observing secretly or informing the informants
C. By using questionnaires or telephonic surveys
D. By using computers and software

Correct Answer: B. By observing secretly or informing the informants
Explanation: Observations can be conducted by either informing the informants beforehand or in a hidden manner without their knowledge.

Q122: What is a major drawback when observing people who know they are being watched?
A. They become more cooperative
B. Their behavior may be distorted or manipulated
C. They may leave the area
D. They become hostile

Correct Answer: B. Their behavior may be distorted or manipulated
Explanation: People often alter their behavior when they are aware of being observed, seeing less natural and authentic.

Q123: How can the ethical issue of observing people secretly be minimized?
A. By using cameras and microphones
B. By observing from a long distance
C. By becoming a participant observer
D. By taking anonymous notes

Correct Answer: C. By becoming a participant observer
Explanation: The researcher can minimize ethical concerns by joining the group as a participant, allowing them to observe more naturally and with fewer ethical issues.

Q124: In which field has the participant observation method been especially effective?
A. Industrial research
B. Cultural and anthropological studies
C. Market research
D. Scientific experiments

Correct Answer: B. Cultural and anthropological studies
Explanation: Participant observation has been highly effective in anthropological and cultural studies, where the researcher lives among the group to gather detailed insights.

Q125: What is a primary quality that a well-designed questionnaire should have?
A. It should be lengthy and detailed
B. It should contain complex questions
C. It should be brief, clear, and to the point
D. It should include personal information questions

Correct Answer: C. It should be brief, clear, and to the point
Explanation: A good questionnaire should be straightforward, focused, and concise to facilitate better responses from participants.

Q126: Why should anonymity be promised to respondents?
A. To collect as much data as possible
B. To protect their privacy and encourage honest responses
C. To increase the length of the questionnaire
D. To make it more entertaining

Correct Answer: B. To protect their privacy and encourage honest responses
Explanation: Promising anonymity helps build trust and ensures respondents feel comfortable providing truthful answers.

Q127: What is a major advantage of telephonic surveys?
A. They are time-consuming
B. They can be conducted at a mutually convenient time
C. They are difficult to administer
D. They are suitable only for local areas

Correct Answer: B. They can be conducted at a mutually convenient time
Explanation: Telephonic surveys allow the researcher and respondent to choose a convenient time for discussion, enhancing participation.

Q128: Which of the following is a problem associated with telephonic surveys?
A. They are costly
B. There is no record of what was said unless recorded
C. They require face-to-face interaction
D. They have a low response rate

Correct Answer: B. There is no record of what was said unless recorded
Explanation: Unless the conversation is recorded, there is no evidence of what was discussed, which can lead to potential disputes or misunderstandings later.

Q129: Why are telephonic surveys preferred when respondents are geographically scattered?
A. They reduce travel costs and time
B. They require less equipment
C. They allow for face-to-face discussions
D. They can be performed anonymously

Correct Answer: A. They reduce travel costs and time
Explanation: Telephonic surveys are economical in terms of both time and money, making them ideal for surveys involving respondents from remote or widely spread areas.

Q130: Which of the following is NOT a recommended quality of a good questionnaire?
A. Including only relevant questions
B. Being lengthy and detailed
C. Being brief and clear
D. Offering anonymity to respondents

Correct Answer: B. Being lengthy and detailed
Explanation: Lengthy questionnaires tend to discourage respondents and reduce response rates, making them less effective.

Q131: What problem does new technology help solve in survey research?
A. Sampling issues
B. Problems of conventional survey instruments
C. Ethical concerns in research
D. Lack of theoretical framework

Correct Answer: B. Problems of conventional survey instruments
Explanation: New technology, such as electronic surveys, addresses issues associated with traditional print and telephonic surveys by offering more flexibility, lower costs, and easier data management.

Q132: Which software is mentioned for processing electronically collected survey data?
A. Excel
B. Python
C. SPSS
D. Tableau

Correct Answer: C. SPSS
Explanation: SPSS (Statistical Package for Social Sciences) is recommended for processing electronically collected data in social science research.

Q133: What is a significant advantage of web-based surveys compared to telephonic surveys?
A. They require less internet bandwidth
B. They ensure physical presence
C. Respondents can answer at any convenient time
D. They offer in-person interaction

Correct Answer: C. Respondents can answer at any convenient time
Explanation: Web-based surveys are advantageous because respondents can answer at their own convenience, unlike telephonic surveys which require a mutually suitable time.

Q134: What is a major drawback of electronic surveys?
A. High costs of implementation
B. Limited geographical reach
C. Digital divide and lack of internet access
D. Difficulty in data analysis

Correct Answer: C. Digital divide and lack of internet access
Explanation: The digital divide poses a challenge for electronic surveys, as not everyone has access to or is comfortable using the internet, especially older generations.

Q135: What can help in gathering email IDs for conducting electronic surveys?
A. Library databases
B. Email directories
C. Newsgroups and listservs
D. Phone directories

Correct Answer: C. Newsgroups and listservs
Explanation: Newsgroups and listservs, where

professionals with common interests share their contact details, can help researchers find email IDs for electronic surveys.

Q136: Why is survey research particularly suited for library and information management studies?
A. It involves complex experiments
B. It has been widely used in previous studies
C. It does not require data collection
D. It is based on theoretical analysis only

Correct Answer: B. It has been widely used in previous studies
Explanation: Survey research is commonly used in library and information management studies to assess various aspects such as public library services, information needs, and the use of technology.

Q137: What type of logic is mostly used in survey research?
A. Deductive logic
B. Inductive logic
C. Abductive logic
D. Reductive logic

Correct Answer: B. Inductive logic
Explanation: Survey research uses inductive logic, drawing general conclusions from specific data collected during the research.

Q138: Which of the following is an example of survey research in library science?
A. Experimental research on cataloging methods
B. A survey of information needs of soil scientists
C. Historical research on ancient manuscripts
D. A case study of one public library

Correct Answer: B. A survey of information needs of soil scientists
Explanation: Survey research often includes studies like the one on the information needs of soil scientists, focusing on data collection through questionnaires and other survey methods.

Q139: What is the recommended approach for designing a questionnaire?
A. Include detailed personal questions
B. Make it brief and simple
C. Use technical jargon frequently
D. Make it as lengthy as possible

Correct Answer: B. Make it brief and simple
Explanation: A well-designed questionnaire should be brief, straightforward, and easy to understand, ensuring higher response rates and more accurate data.

Q140: What is the main benefit of electronic data collection over conventional methods?
A. High equipment cost
B. Clerical errors in data transfer
C. Direct downloading and processing
D. Complex data classification

Correct Answer: C. Direct downloading and processing
Explanation: Electronic data collection allows direct downloading and processing of information, eliminating clerical errors and saving time in data management.

Unit 4 – Experimental Research

Q141: What is the literal meaning of the term 'experiment'?
A. To apply established methods repeatedly
B. To test or try something new for the first time
C. To analyze existing data sets
D. To replicate existing experiments in a controlled environment

Correct Answer: B. To test or try something new for the first time
Explanation: The literal meaning of an experiment

is to test something new or to try it for the first time to study its effectiveness or potential defects.

Q142: What is the central focus of the experimental method in scientific research?
A. Describing existing phenomena
B. Establishing correlations
C. Studying cause-effect relationships
D. Conducting surveys

Correct Answer: C. Studying cause-effect relationships
Explanation: The experimental method is primarily concerned with studying cause-effect relationships between two variables through direct observation and measurement.

Q143: Where are experimental studies ideally conducted to maintain controlled conditions?
A. Public spaces
B. Laboratories
C. Classrooms
D. Libraries

Correct Answer: B. Laboratories
Explanation: Laboratories provide controlled conditions ideal for studying cause-effect relationships between variables, making them suitable for experimental research.

Q144: What are the two main types of variables in experimental research?
A. Continuous and Discrete
B. Independent and Dependent
C. Quantitative and Qualitative
D. Primary and Secondary

Correct Answer: B. Independent and Dependent
Explanation: In experimental research, variables are categorized as independent (causal) and dependent (affected) variables.

Q145: What type of research design is used to establish cause-effect relationships in experimental research?
A. Historical design
B. Experimental design
C. Descriptive design
D. Ethnographic design

Correct Answer: B. Experimental design
Explanation: Experimental research design is specifically used to establish cause-effect relationships between variables.

Q146: Which type of experimental design is *not*?
A. Pre-experimental design
B. Quasi-experimental design
C. True experimental design
D. Cross-sectional design

Correct Answer: D. Cross-sectional design
Explanation: Pre-experimental, quasi-experimental, and true experimental designs, but not cross-sectional design.

Q147: What is the purpose of forming a null hypothesis in experimental research?
A. To identify independent variables
B. To predict the exact outcome
C. To state that no difference exists between two variables
D. To show cause-effect relationships explicitly

Correct Answer: C. To state that no difference exists between two variables
Explanation: A null hypothesis states that there is no statistically significant difference between experimental and control groups, implying no effect or relationship between variables.

Q148: Which of the following best defines a *null hypothesis*?
A. A statement indicating a strong correlation between two variables
B. A prediction that significant differences exist

between variables
C. An assumption that no statistically significant difference exists
D. A prediction of a specific outcome for the control group

Correct Answer: C. An assumption that no statistically significant difference exists
Explanation: A null hypothesis assumes that no statistically significant difference exists between the experimental and control groups.

Q149: How is a hypothesis typically formulated in experimental research?
A. Through deductive logic alone
B. Based on random assumptions
C. Through long observation and literature review
D. By analyzing experimental results beforehand

Correct Answer: C. Through long observation and literature review
Explanation: A hypothesis is usually formulated through inductive logic, based on extensive observation and review of existing literature.

Q150: What logical approach is used when applying a hypothesis to specific instances in experimental research?
A. Abductive logic
B. Reductive logic
C. Deductive logic
D. Inductive logic

Correct Answer: C. Deductive logic
Explanation: Deductive logic is used to apply a general hypothesis to specific instances to test its validity in experimental research.

Q151: Why is sampling necessary in research procedures?
A. To ensure a broader scope of research
B. To eliminate the need for statistical analysis
C. To study a smaller, representative group when the population is too large
D. To include only specific cases in the study

Correct Answer: C. To study a smaller, representative group when the population is too large
Explanation: Sampling is used to create a manageable subset of a larger population that accurately represents the group, making it easier to conduct research.

Q152: What should a sample represent when conducting research?
A. A random selection of any group
B. A homogeneous and representative subset of the population
C. A diverse collection of unrelated subjects
D. A group that includes outliers

Correct Answer: B. A homogeneous and representative subset of the population
Explanation: A sample should be homogeneous and representative of the population being studied to ensure the accuracy and validity of the research results.

Q153: What is the acceptable margin of error for a representative sample in experimental research?
A. 1%
B. 5%
C. 10%
D. 15%

Correct Answer: B. 5%
Explanation: A 5% margin of error is considered acceptable in most research studies to indicate the sample's accuracy in representing the entire population.

Q154: What is an experimental group in research?
A. A group that is left in its natural condition
B. A group that is not treated or exposed
C. A group that receives treatment to observe changes
D. A group excluded from the research study

Correct Answer: C. A group that receives treatment to observe changes
Explanation: The experimental group is exposed to a particular treatment to study the effects on the dependent variable.

Q155: What is a control group in research?
A. A group that is manipulated and tested
B. A group that remains static and receives no treatment
C. A group that undergoes major changes
D. A group that is used to implement new interventions

Correct Answer: B. A group that remains static and receives no treatment
Explanation: The control group is kept in its natural condition without receiving any treatment, serving as a benchmark for comparison.

Q156: What is the primary focus of internal validity in research?
A. Generalizability of results
B. Accuracy of observation and measurement of the dependent variable
C. Randomization of sampling
D. Applicability of findings to a wider context

Correct Answer: B. Accuracy of observation and measurement of the dependent variable
Explanation: Internal validity ensures that the changes in the dependent variable are solely due to the influence of the independent variable, not other factors.

Q157: What does external validity in research refer to?
A. Validity of statistical tests
B. Level of control in laboratory experiments
C. Generalizability of the research results
D. Comparison between independent variables

Correct Answer: C. Generalizability of the research results
Explanation: External validity is concerned with how well the results can be generalized or applied to other settings, groups, or situations beyond the study.

Q158: Why do laboratory experiments typically have high internal validity?
A. Because they are conducted in natural settings
B. Because external variables are left uncontrolled
C. Because independent variables can be precisely controlled
D. Because they are conducted without any variables

Correct Answer: C. Because independent variables can be precisely controlled
Explanation: Laboratory experiments allow precise control over independent variables, ensuring that any changes in the dependent variable can be accurately measured.

Q159: What is randomization in research?
A. Assigning participants to groups without bias
B. Selecting participants based on their preferences
C. Ensuring all participants have identical characteristics
D. Controlling the experimental setting without variables

Correct Answer: A. Assigning participants to groups without bias
Explanation: Randomization is the process of assigning participants to different groups purely by chance to avoid selection bias and ensure comparable groups.

Q160: Why might experiments be repeated with different groups or on different days?
A. To increase the sample size
B. To minimize the influence of sampling errors
C. To ensure better external validity of results
D. To vary the dependent variable

Correct Answer: C. To ensure better external validity of results
Explanation: Repeating experiments with different groups or on different days helps to ensure that the findings are consistent and can be generalized to a broader population.

Q161: What is a major limitation of conducting experiments in a laboratory?
A. The inability to control any variables
B. Artificial conditions may not truly represent real-world situations
C. The lack of resources for testing
D. It provides the best results in behavioral sciences

Correct Answer: B. Artificial conditions may not truly represent real-world situations
Explanation: Experiments in a laboratory may not capture the complexity and realism of natural or real-world settings, making the findings less applicable to broader situations.

Q162: Why is it difficult to apply the experimental method to social sciences?
A. It focuses on controlling too many variables at once
B. It ignores all types of variables
C. It assumes a simple relationship between single variables
D. It does not require human participants

Correct Answer: C. It assumes a simple relationship between single variables
Explanation: Social sciences deal with complex interactions among multiple variables, making it hard to isolate and study them individually, as assumed in a traditional experimental approach.

Q163: What does John W. Best suggest about human events and variables?
A. Human events are usually the result of single causes
B. Human events cannot be understood using controlled variables
C. Human events result from the interaction of many variables
D. Human events should not be studied scientifically

Correct Answer: C. Human events result from the interaction of many variables
Explanation: Human behavior is influenced by a multitude of interacting factors, making it difficult to study using a single variable approach.

Q164: Why is it challenging to conduct experiments on human subjects?
A. They can be manipulated like chemicals
B. Humans have inherent biases when under observation
C. Human beings cannot manipulate their natural behavior
D. They do not show any reaction to experimentation

Correct Answer: B. Humans have inherent biases when under observation
Explanation: When humans know they are being observed, they may alter their natural behavior, which can lead to skewed results.

Q165: What ethical consideration should be taken when conducting research on human beings?
A. Treat them as samples for scientific study
B. Ensure their right to privacy and use data only for research purposes
C. Pass on the collected information to third parties
D. Restrict their access to research findings

Correct Answer: B. Ensure their right to privacy and use data only for research purposes
Explanation: Ethical research practices include protecting participants' privacy and ensuring that any data collected is used solely for the intended research purposes.

Q166: Which of the following is a reason why experimental results may not reflect objective reality in social sciences?
A. Human beings can be easily placed under controlled conditions
B. Experiments are always conducted ethically
C. The inherent biases of the experimenter may influence results
D. Social science experiments always provide accurate results

Correct Answer: C. The inherent biases of the experimenter may influence results
Explanation: Experimenters may have personal biases that can influence the way they observe or interpret the behavior of human participants.

Q167: What must a researcher do before studying an individual human being?
A. Collect data without informing them
B. Manipulate the results for accuracy
C. Obtain prior permission and explain the research purpose
D. Ignore their privacy rights

Correct Answer: C. Obtain prior permission and explain the research purpose
Explanation: Researchers need to get informed consent and explain the aims and potential risks of the study to the participant before conducting the research.

Q168: Which of the following is an ethical guideline for research involving animals?
A. Use as many animals as possible
B. Do not provide any information to peers
C. Avoid subjecting animals to any cruelty
D. Manipulate the data to ensure positive results

Correct Answer: C. Avoid subjecting animals to any cruelty
Explanation: Ethical research with animals involves treating them humanely and ensuring that no unnecessary harm or cruelty is inflicted.

Q169: What should a researcher do if their data is under suspicion?
A. Hide the data to protect their reputation
B. Destroy all research records
C. Make the data available to peers and reviewers
D. Stop the research immediately

Correct Answer: C. Make the data available to peers and reviewers
Explanation: Sharing data with peers and reviewers ensures transparency and allows for the verification of the research findings.

Q170: Why can't human beings be treated like chemicals in experimental research?
A. They have predictable behaviors
B. Their reactions can be precisely measured
C. They cannot be isolated and manipulated easily
D. They can be tested in a laboratory environment

Correct Answer: C. They cannot be isolated and manipulated easily
Explanation: Human beings have complex emotions, thoughts, and behaviors, which makes it difficult to study them in a controlled and isolated manner like chemical substances.

Unit 5 FUNDAMENTAL, APPLIED AND ACTION RESEARCH

Q171: What does the term "scientific method" imply?
A. Only methods used by pure scientists
B. Any objective and verifiable method to discover new knowledge
C. A method that cannot be questioned
D. Only methods used in laboratory experiments

Correct Answer: B. Any objective and verifiable method to discover new knowledge
Explanation: The scientific method refers to any systematic approach that is objective and verifiable, aimed at discovering new knowledge.

Q172: What is essential for research methodology to be considered valid?
A. It must only use experimental methods
B. It must employ the scientific method
C. It should focus on historical analysis
D. It should be based on common sense

Correct Answer: B. It must employ the scientific method
Explanation: Research methodology is considered valid only if it uses the scientific method, which is necessary for objective research.

Q173: What role does imagination play in the scientific method?
A. It is unnecessary for hypothesis formation
B. It is crucial for forming hypotheses
C. It complicates the research process
D. It is only useful in descriptive research

Correct Answer: B. It is crucial for forming hypotheses
Explanation: Imagination is essential in forming hypotheses, particularly in research that seeks to explore cause-effect relationships.

Q174: Which of the following is NOT a step in the scientific method?
A. Identification and formulation of the problem
B. Data analysis and conclusion
C. Formation of hypotheses
D. Application of common sense

Correct Answer: D. Application of common sense
Explanation: While common sense can guide problem-solving, it is not outlined as a formal step in the scientific method.

Q175: What does S.R. Ranganathan's "Spiral of Scientific Method" illustrate about scientific progress?
A. Science is a stagnant process
B. Science moves in a linear fashion
C. Science is a circular process that continuously evolves
D. Science does not account for growth

Correct Answer: C. Science is a circular process that continuously evolves
Explanation: Ranganathan's spiral metaphor emphasizes that science progresses continuously while revisiting and building upon previous knowledge.

Q176: What is the primary aim of the scientific method?
A. To generate theories without testing
B. To create new knowledge or correct existing facts
C. To simplify complex problems
D. To avoid transparency in research

Correct Answer: B. To create new knowledge or correct existing facts
Explanation: The scientific method aims to discover or generate new knowledge and to correct or refine existing theories and facts.

Q177: What is nature of research?
A. Research is a straightforward and mechanical process
B. Research is simple and does not require much effort
C. Research is complex, requiring hard work and ingenuity
D. Research can always be completed in a short time

Correct Answer: C. Research is complex, requiring hard work and ingenuity
Explanation: Research may appear mechanical, it is, in fact, complex and demanding.

Q178: How does define a "scientific method"?
A. It only applies to physical sciences
B. It is a standardized procedure for generalizing data
C. It disregards ethical considerations
D. It relies solely on personal opinion

Correct Answer: B. It is a standardized procedure for generalizing data
Explanation: The scientific method involves a systematic approach to collecting and analyzing data to formulate generalizable theories.

Q179: What role does a crime investigator play in illustrating the scientific method?
A. They rely solely on intuition
B. They use systematic observation and correlation
C. They do not apply scientific methods
D. They only work with physical evidence

Correct Answer: B. They use systematic observation and correlation
Explanation: A crime investigator employs systematic methods of observation and correlation to solve cases, exemplifying the application of the scientific method.

Q180: What is highlighted as a common characteristic of methods in social sciences and humanities?
A. They are not considered scientific
B. They focus exclusively on historical data
C. They employ scientific methods as well
D. They lack a structured approach

Correct Answer: C. They employ scientific methods as well
Explanation: Research methods in social sciences and humanities are also scientific, using the same rigorous approach to inquiry.

Q181: How is the spiral structure divided to illustrate the scientific method?
A. Into three quadrants
B. Into four quadrants
C. Into five quadrants
D. Into two quadrants

Correct Answer: B. Into four quadrants
Explanation: The spiral is divided into four quadrants by two perpendicular lines intersecting at the center.

Q182: What does the term "nadir" refer to in the context of the spiral structure?
A. The highest point
B. The lowest point
C. Going upwards
D. Going downwards

Correct Answer: B. The lowest point
Explanation: "Nadir" literally means the lowest point and is located at the lower end of the vertical line in the spiral structure.

Q183: Which quadrant is referred to as the "empirical phase"?
A. First quadrant
B. Second quadrant
C. Third quadrant
D. Fourth quadrant

Correct Answer: A. First quadrant
Explanation: The first quadrant, located at the nadir, is known as the empirical phase where data is collected.

Q184: What is the primary activity in the second quadrant of the spiral?
A. Data collection
B. Data verification
C. Data processing
D. Law deduction

Correct Answer: C. Data processing
Explanation: In the second quadrant, known as the hypothesis phase, data is collected, tabulated, classified, and analyzed.

Q185: What logical approach is used in the second quadrant to formulate hypotheses?
A. Deductive logic
B. Inductive logic
C. Common sense
D. Intuitive reasoning

Correct Answer: B. Inductive logic
Explanation: In the second quadrant, hypotheses are drawn using inductive logic and intuition based on analyzed data.

Q186: What happens in the third quadrant of the spiral?
A. Data is collected
B. Laws are deduced
C. Higher generalizations are drawn
D. Hypotheses are formulated

Correct Answer: B. Laws are deduced
Explanation: The third quadrant is known as the deductive phase, where laws are deduced using deductive logic.

Q187: What is the purpose of the fourth quadrant in the spiral?
A. To formulate hypotheses
B. To collect empirical data
C. To test and verify laws
D. To analyze qualitative data

Correct Answer: C. To test and verify laws
Explanation: The fourth quadrant, known as the verification phase, involves testing and verifying the laws formulated in the third quadrant.

Q188: What statistical techniques may be used in the fourth quadrant?
A. To formulate hypotheses
B. To support or disprove hypotheses
C. To collect qualitative data
D. To gather empirical observations

Correct Answer: B. To support or disprove hypotheses
Explanation: Statistical techniques may be applied in the verification phase to support or disprove the formulated hypotheses.

Q189: What does the spiral movement represent in the context of scientific research?
A. A static process of inquiry
B. Continuous progress in knowledge discovery
C. A return to previous research phases
D. A method limited to quantitative research

Correct Answer: B. Continuous progress in knowledge discovery
Explanation: The spiral movement indicates that science is progressive, constantly scaling new heights and discovering new knowledge.

Q190: In which quadrant is the "ground situation" assessed?
A. First quadrant
B. Second quadrant
C. Third quadrant
D. Fourth quadrant

Correct Answer: B. Second quadrant
Explanation: The ground situation is assessed in the second quadrant during the hypothesis phase after data is analyzed.

More info

Quadrant	Span/Situation	Phase of Research	Method/Tool
I	N –A South-West	Empirical	Experience and ob servation/ literature survey
II	A-Z North-West	Hypothesizing	Intitution & Imagi nation
III	Z-D North-East	Deductive	Intellection/ Logic/ Statistics
IV	D-N South-East	Verification	Applications/ Math ematics

Q191: How many types of research are traditionally categorized based on immediate

purpose?
A. Two types
B. Three types
C. Four types
D. Five types

Correct Answer: B. Three types
Explanation: Traditionally, research is categorized into three types: Basic Research, Applied Research, and Action Research.

Q192: What is another name for Basic Research?
A. Practical Research
B. Theoretical Research
C. Action Research
D. Experimental Research

Correct Answer: B. Theoretical Research
Explanation: Basic Research is also known as pure, fundamental, or theoretical research, focusing on knowledge for its own sake.

Q193: What is the main aim of Basic Research?
A. To solve immediate problems
B. To produce new knowledge
C. To develop practical applications
D. To conduct surveys

Correct Answer: B. To produce new knowledge
Explanation: Basic Research aims to generate new knowledge regardless of any immediate application or use.

Q194: Which of the following is an example of Applied Research?
A. Five Laws of Library Science
B. Historical Research
C. Action Research
D. Pure Theory Development

Correct Answer: C. Action Research
Explanation: Action Research is a type of Applied Research conducted to solve immediate problems in theory or practice.

Q195: What characterizes Applied Research?
A. It is conducted purely for knowledge.
B. It aims to solve practical problems.
C. It has no immediate applications.
D. It is solely theoretical.

Correct Answer: B. It aims to solve practical problems.
Explanation: Applied Research focuses on addressing immediate problems or needs in various fields.

Q196: How is the distinction between Basic and Applied Research described?
A. Clear and permanent
B. Superficial and temporary
C. Rigid and fixed
D. Unchangeable

Correct Answer: B. Superficial and temporary
Explanation: The distinction between Basic and Applied Research is described as superficial, illusory, and temporary.

Q197: What does imply about the relationship between Basic and Applied Research?
A. They are completely unrelated.
B. They do not share methods and techniques.
C. They often influence and interact with each other.
D. Basic Research is more important than Applied Research.

Correct Answer: C. They often influence and interact with each other.
Explanation: Many problems for theoretical research emerge from practical failures, indicating an interaction between the two.

Q198: What is an example of a discovery that initially seemed useless but later found applications?
A. Telephone

B. X-ray
C. Television
D. Internet

Correct Answer: B. X-ray
Explanation: The discovery of X-rays was accidental and had no immediate use at the time, but now has numerous practical applications.

Q199: What do the Five Laws of Library Science by S.R. Ranganathan represent?
A. Theoretical knowledge with no practical use
B. Practical solutions for library management
C. A historical account of library science
D. A method for conducting basic research

Correct Answer: B. Practical solutions for library management
Explanation: The Five Laws of Library Science put knowledge to work, representing practical applications in the field of library management.

Q200: What is the ultimate characteristic of knowledge?
A. It is purely theoretical.
B. It is always utilitarian.
C. It has no applications.
D. It is irrelevant to society.

Correct Answer: B. It is always utilitarian.
Explanation: All knowledge is utilitarian, ultimately finding applications in various fields.

Q201: What distinguishes research methods from research techniques?
A. Research methods are more complex than techniques.
B. Research methods include various approaches like descriptive and experimental.
C. Research techniques are more important than methods.
D. Research methods are solely focused on data collection.

Correct Answer: B. Research methods include various approaches like descriptive and experimental.
Explanation: Research methods encompass different approaches, including descriptive, comparative, exploratory, diagnostic, experimental, and historical.

Q202: Which of the following is an example of Descriptive Research?
A. A comparative study of public libraries in two cities
B. A survey of reading habits among housewives
C. An experimental investigation of library user behavior
D. A historical analysis of library systems

Correct Answer: B. A survey of reading habits among housewives
Explanation: Descriptive Research aims to study and report the status of a current situation, as seen in surveys like this one.

Q203: What type of questions does Descriptive Research primarily seek to answer?
A. How and Why
B. What, Who, When, and Where
C. Which and Whom
D. Where and How

Correct Answer: B. What, Who, When, and Where
Explanation: Descriptive Research is focused on answering these specific types of questions.

Q204: What is the first stage of Descriptive Research?
A. Collecting data
B. Literature review
C. Defining the problem
D. Reporting conclusions

Correct Answer: B. Literature review
Explanation: The first stage involves conducting a literature review to understand previous work and identify problems.

Q205: What does Comparative Research aim to achieve?
A. To study a single entity in depth
B. To compare and contrast multiple entities
C. To formulate a hypothesis
D. To conduct historical analysis

Correct Answer: B. To compare and contrast multiple entities
Explanation: Comparative Research involves comparing two or more entities to identify their best features and shortcomings.

Q206: What is a limitation of Comparative Research?
A. It always leads to clear conclusions.
B. Every entity exists in a different environment.
C. It requires extensive literature review.
D. It cannot be applied in library science.

Correct Answer: B. Every entity exists in a different environment.
Explanation: The limitation lies in the fact that each entity's features may not work outside their specific context.

Q207: What is the primary purpose of Exploratory Research?
A. To test hypotheses rigorously
B. To gather detailed quantitative data
C. To explore the viability of a research problem
D. To formulate a final research conclusion

Correct Answer: C. To explore the viability of a research problem
Explanation: Exploratory Research is conducted to assess the feasibility of pursuing a particular research idea or problem.

Q208: Which of the following is NOT a step in Exploratory Research?
A. Conducting preliminary literature review
B. Testing hypotheses
C. Consulting with colleagues and experts
D. Identifying variables

Correct Answer: B. Testing hypotheses
Explanation: In Exploratory Research, researchers do not test or prove hypotheses; instead, they focus on gathering insights.

Q209: What does the term "heuristic approach" refer to in the context of Exploratory Research?
A. A rigid methodology
B. A method of following a fixed path
C. A trial-and-error learning process
D. A strictly quantitative analysis

Correct Answer: C. A trial-and-error learning process
Explanation: A heuristic approach involves exploration and adaptation as researchers seek to refine their research focus.

Q210: Why is Exploratory Research considered an initial step in a longer research process?
A. It provides definitive answers to research questions.
B. It is not necessary for all research projects.
C. It helps to refine and clarify the research problem.
D. It eliminates the need for further investigation.

Correct Answer: C. It helps to refine and clarify the research problem.
Explanation: Exploratory Research serves as a foundation for further investigation, helping to define and clarify the research focus.

Q211: What is the primary goal of Diagnostic Research?
A. To perform in-depth historical analysis
B. To identify and solve a specific problem
C. To conduct large-scale surveys
D. To formulate general theories

Correct Answer: B. To identify and solve a specific problem

Explanation: Diagnostic Research focuses on problem identification and finding solutions through a systematic approach.

Q212: Which of the following is NOT a phase of Diagnostic Research?
A. Emergence and identification of the problem
B. Clinical observation
C. Diagnosis of its roots and causes
D. Suggesting a possible solution

Correct Answer: B. Clinical observation
Explanation: While clinical observation is a method of data collection, it is not specifically listed as a phase of Diagnostic Research.

Q213: What are the four major ways to yield data in Diagnostic Research?
A. Case history, clinical observation, surveys, and experiments
B. Case history, clinical observation, informal testing, and formal standardized testing
C. Interviews, case studies, experiments, and surveys
D. Observations, questionnaires, case studies, and interviews

Correct Answer: B. Case history, clinical observation, informal testing, and formal standardized testing
Explanation: These methods provide insights necessary for diagnosis in Diagnostic Research.

Q214: In the context of Diagnostic Research, what is the purpose of conducting a case study or interview?
A. To gather quantitative data for statistical analysis
B. To understand the life cycle of an individual and their influences
C. To test hypotheses and confirm theories
D. To compare different entities and their features

Correct Answer: B. To understand the life cycle of an individual and their influences
Explanation: Case studies and interviews aim to gather in-depth information about individuals and their experiences.

Q215: How is Clinical Observation used in Diagnostic Research?
A. To conduct surveys about reading habits
B. To observe behavior using formal or informal methods
C. To diagnose problems in library management systems
D. To evaluate the effectiveness of treatment methods

Correct Answer: B. To observe behavior using formal or informal methods
Explanation: Clinical observation focuses on understanding behavior and performance through various observation techniques.

Q216: What is the main focus of Social Research?
A. To study individual behavior in depth
B. To gather data from a large number of cases at a particular time
C. To conduct experiments in controlled settings
D. To analyze historical events and their implications

Correct Answer: B. To gather data from a large number of cases at a particular time
Explanation: Social Research involves collecting data from large populations to assess trends and conditions.

Q217: Which statement describes the nature of social surveys?
A. They focus exclusively on individual preferences.
B. They are primarily historical analyses.
C. They portray a prevailing condition at a given

time.
D. They aim to prove specific hypotheses.

Correct Answer: C. They portray a prevailing condition at a given time.
Explanation: Social surveys are designed to capture the status of various factors in a population at a specific moment.

Q218: What is an example of a well-known social survey?
A. Kinsey's survey of American sexual behavior
B. A survey of library collection sizes
C. A study of reading habits in children
D. An analysis of historical library systems

Correct Answer: A. Kinsey's survey of American sexual behavior
Explanation: Kinsey's surveys are noted as classic examples of comprehensive social surveys.

Q219: What is a potential drawback of social research surveys?
A. They require minimal planning.
B. A small error in sampling may lead to wrong results.
C. They always produce definitive answers.
D. They are inexpensive and easy to conduct.

Correct Answer: B. A small error in sampling may lead to wrong results.
Explanation: Social research is sensitive to sampling errors, which can significantly affect the accuracy of the findings.

Q220: How can Social Research methods be implemented?
A. Only through mailed questionnaires
B. Through personal interviews, door-to-door surveys, and mailed questionnaires
C. Exclusively through telephone interviews
D. Only by online surveys

Correct Answer: B. Through personal interviews, door-to-door surveys, and mailed questionnaires
Explanation: Social Research employs a variety of methods for data collection, ensuring broad reach and effectiveness.

UNIT 6 MEASUREMENT OF VARIABLES

Q221. Which of the following is a qualitative variable?

A) **Gender**

B) Age

C) Income

D) Weight

Answer: **A) Gender**

Explanation: Qualitative variables cannot be expressed in numerical terms and represent categories. In this case, gender (male, female, etc.) is a qualitative variable because it categorizes individuals without any inherent numerical value.

Q222. Which type of variable is expressed in numerical terms and allows for mathematical operations?

A) **Quantitative variable**

B) Nominal variable

C) Ordinal variable

D) Attribute variable

Answer: **A) Quantitative variable**

Explanation: Quantitative variables, also called numerical variables, can be expressed in numerical terms and subjected to mathematical operations like addition, subtraction, multiplication, and division. Examples include age, income, and height.

Q223. What type of variable is marital status considered to be?

A) Ordinal

B) **Nominal**

C) Quantitative

D) Continuous

Answer: **B) Nominal**

Explanation: Marital status is a qualitative variable where categories like 'married' and 'single' do not have a specific order or rank. This makes it a nominal variable since the categories cannot be logically ordered.

Q224. Which of the following is an example of a discrete quantitative variable?

A) Age

B) **Number of children in a family**

C) Weight

D) Distance traveled

Answer: **B) Number of children in a family**

Explanation: A discrete quantitative variable is one that takes on distinct, separate values, typically whole numbers. The number of children in a family is a discrete variable because it cannot be a fraction and must be a whole number.

Q225. In which type of variable can the categories be arranged in an ascending or descending order?

A) Nominal

B) **Ordinal**

C) Continuous

D) Discrete

Answer: **B) Ordinal**

Explanation: Ordinal variables allow for a logical order among the categories. For example, educational qualifications like 'secondary', 'senior secondary', 'graduate', and 'post-graduate' can be arranged in an ascending order based on the years of education.

Q226. Which of the following statements is true about continuous variables?

A) They can only take whole number values.

B) **They can assume any value within an interval.**

C) They cannot be expressed in numerical terms.

D) They cannot be subjected to mathematical operations.

Answer: **B) They can assume any value within an interval.**

Explanation: Continuous variables can take any value within a given range, including fractions and decimals. For instance, the weight of a person can be measured with any level of precision and can take any value between two points.

Q227. Which of the following is considered primary data?

A) Census data

B) Handbook information

C) **Data collected through field survey**

D) Budget reports

Answer: **C) Data collected through field survey**

Explanation: Primary data refers to data collected firsthand by the researcher through methods like surveys, interviews, or observations. It is original and collected specifically for the research at hand.

Q228. What distinguishes ordinal variables from nominal variables?

A) Ordinal variables cannot be divided into categories.

B) Nominal variables can be arranged in order.

C) **Ordinal variables have a meaningful order among categories.**

D) Nominal variables are only quantitative.

Answer: **C) Ordinal variables have a meaningful order among categories.**

Explanation: While nominal variables classify data into categories without a specific order, ordinal variables have a logical sequence or ranking among categories, like educational levels (secondary, senior secondary, graduate, etc.).

Q229. Which of the following best describes secondary data?

A) **Data collected from published sources**

B) Data collected through interviews

C) Data collected firsthand

D) Data collected for a specific research study

Answer: **A) Data collected from published sources**

Explanation: Secondary data is information that has been previously collected and published by others, such as census data, books, journals, or online resources, and is used for further research or analysis.

Q230. Which type of variable can be divided into categories where one category is greater or higher than another but the difference between them cannot be quantified?

A) Nominal

B) Quantitative

C) **Ordinal**

D) Continuous

Answer: **C) Ordinal**

Explanation: Ordinal variables can be ranked or ordered, but the difference between categories cannot be precisely measured or quantified. An example is educational levels, where 'Senior Secondary' is higher than 'Secondary,' but the exact difference cannot be numerically defined.

Q231. Which of the following is a major challenge in measuring qualitative data?

A) Availability of readymade scales
B) Expression in numerical terms
C) **Ambiguity and inter-personal variability in definitions**
D) Consistent results

Answer: **C) Ambiguity and inter-personal variability in definitions**

Explanation: Measuring qualitative data is challenging due to the subjective nature of concepts like social behavior and cultural environment, which often lack clear, standardized definitions. This leads to ambiguity and inter-personal variability.

Q232. Which of the following is NOT a type of variable typically measured in qualitative research?

A) Social behavior
B) Personality
C) Cultural environment
D) **Height**

Answer: **D) Height**

Explanation: Height is a quantitative variable because it is measured in numerical terms. In contrast, variables like social behavior and personality are qualitative and cannot be directly quantified.

Q233. What are the two essential criteria for a good attitude scale?

A) Easy to use and quick
B) **Validity and reliability**
C) Consistent and brief
D) Cost-effective and accurate

Answer: **B) Validity and reliability**

Explanation: An attitude scale should be valid (measuring what it is supposed to measure) and reliable (yielding consistent results under the same conditions).

Q234. Which of the following is a widely used technique of summated ratings in qualitative research?

A) Semantic Differential Scale
B) Thurstone Scale
C) **Likert Scale**
D) Guttman Scale

Answer: **C) Likert Scale**

Explanation: The Likert Scale is a widely used method to measure attitudes, where respondents indicate their level of agreement or disagreement with a series of statements, usually on a five-point scale.

Q235. What is the usual number of points used in a Likert scale?

A) Three
B) Four
C) **Five**
D) Six

Answer: **C) Five**

Explanation: A typical Likert scale uses a five-point continuum ranging from "strongly agree" to "strongly disagree." However, other variations like three-point or seven-point continuums can also be used.

Q236. In a Likert scale, what does assigning weights to responses help determine?

A) **Intensity of attitudes**
B) Order of questions
C) Length of statements
D) Time of survey completion

Answer: **A) Intensity of attitudes**

Explanation: Weights in a Likert scale represent the intensity of a respondent's attitudes, allowing researchers to quantify subjective opinions and analyze the relative strength of responses.

Q237. What is the main purpose of constructing attitude scales in qualitative research?

A) To create numerical data
B) To measure factual information
C) **To measure attitudes and opinions on various issues**
D) To conduct statistical analysis

Answer: **C) To measure attitudes and opinions on various issues**

Explanation: Attitude scales are constructed to measure subjective attitudes and opinions, which are not directly observable or quantifiable, making it essential in understanding complex social behaviors.

Q238. Which of the following expressions is NOT typically used in a five-point Likert scale?

A) Strongly agree
B) Agree
C) Undecided
D) **Never**

Answer: **D) Never**

Explanation: The expression 'Never' is more commonly associated with frequency scales rather than attitude scales. Typical Likert scale expressions are 'Strongly agree,' 'Agree,' 'Undecided,' 'Disagree,' and 'Strongly disagree.'

Q239. What is the role of scale scores in qualitative data measurement?

A) To eliminate subjective opinions
B) To ensure numerical precision
C) **To arrange statements or groups of**

individuals in rank order
D) To create more categories

Answer: **C) To arrange statements or groups of individuals in rank order**

Explanation: Scale scores help in arranging individuals or statements based on their relative intensity, facilitating comparison and prediction of external variables.

Q240. What type of response continuum would include options such as 'Always,' 'Frequently,' and 'Never'?

A) **Seven-point continuum**
B) Three-point continuum
C) Four-point continuum
D) Five-point continuum

Answer: **A) Seven-point continuum**

Explanation: A seven-point continuum offers more granularity in measuring frequency of behaviors, including options like 'Always,' 'Almost Always,' 'Frequently,' 'Occasionally,' 'Rarely,' 'Almost Never,' and 'Never.'

Q241. What is the primary reason for sampling error in a survey?

A) **Only a part of the population is being surveyed**
B) Personal bias of investigators
C) Errors in measurement
D) Non-response by selected units

Answer: **A) Only a part of the population is being surveyed**

Explanation: Sampling error occurs because only a subset of the total population is included in the survey, leading to differences between the sample statistic and the actual population parameter.

Q242. Which type of sampling method can minimize sampling error?

A) Non-probability sampling
B) **Probability sampling**
C) Quota sampling
D) Judgmental sampling

Answer: **B) Probability sampling**

Explanation: Probability sampling, where each unit has an equal chance of being selected, reduces sampling error by ensuring a random and representative sample of the population.

Q243. Which type of error can occur in both a census and a sample survey?

A) Sampling error
B) Measurement error
C) **Non-sampling error**
D) Total error

Answer: **C) Non-sampling error**

Explanation: Non-sampling errors, such as measurement errors, non-responses, and biases, can occur in both census and sample surveys. They are not dependent on the type of survey but on the data collection and recording process.

Q244. Why might a sample survey sometimes provide better results than a census?

A) Because sampling errors are higher
B) Because a larger number of units are surveyed
C) **Because non-sampling errors in a census may be higher**
D) Because it is cost-effective

Answer: **C) Because non-sampling errors in a census may be higher**

Explanation: In a census, the sheer number of units and the involvement of many investigators may lead to higher non-sampling errors, making a well-conducted sample survey more accurate.

Q245. What is the total error in a survey?

A) The sum of measurement and recording errors
B) The difference between sample mean and population mean
C) **The sum of sampling and non-sampling errors**
D) The error due to non-response

Answer: **C) The sum of sampling and non-sampling errors**

Explanation: Total error includes both sampling errors (due to selecting a sample) and non-sampling errors (arising from data collection, recording, and other biases).

Q246. What is the first step in the sampling procedure?

A) Determination of sample size
B) Selection of sampling units
C) **Specification of objectives**
D) Identification of sampling procedure

Answer: **C) Specification of objectives**

Explanation: The first step in any sampling procedure is to clearly define the objectives of the survey, as all subsequent steps, like defining the population and selecting the sample, are based on these objectives.

Q247. What does the 'sampling frame' refer to in sampling?

A) The size of the sample
B) **A list of units from which the sample is drawn**
C) The method used to select samples
D) The sampling error rate

Answer: **B) A list of units from which the sample is drawn**

Explanation: A sampling frame is a complete list of all units in the population from which a sample is selected. It is crucial to ensure that the sampling frame is accurate and up-to-date.

Q248. Which factor does NOT influence the determination of sample size?

A) Population size
B) Desired precision level
C) Variability among units
D) **Sampling frame**

Answer: **D) Sampling frame**

Explanation: The sample size is influenced by factors like population size, variability, desired precision, response rate, and available resources. The sampling frame only lists the units but does not directly affect the sample size.

Q249. What is considered a 'small sample' in sampling procedures?

A) A sample with fewer than 50 units
B) A sample with fewer than 100 units
C) **A sample size less than or equal to 30**
D) A sample size greater than 30

Answer: **C) A sample size less than or equal to 30**

Explanation: A sample size is considered small if it is less than or equal to 30. Procedures for drawing inferences vary based on whether the sample is categorized as small or large.

Q250. What is the purpose of 'identification of sampling procedure' in sampling?

A) To prepare the sampling frame
B) To define the units to be included
C) **To select a method that gives a representative sample**
D) To determine the sample size

Answer: **C) To select a method that gives a representative sample**

Explanation: The identification of a sampling procedure aims to choose a method that yields a representative sample, is feasible given constraints, and is cost-effective for the research objectives.

Q251. What is the main characteristic of probability sampling?

A) Involves judgment in selection
B) **Includes an element of randomness**
C) Uses quota-based selection
D) Suitable for homogeneous populations only

Answer: **B) Includes an element of randomness**

Explanation: Probability sampling is defined by the use of random methods to select units, ensuring each unit has an equal and unbiased chance of being chosen.

Q252. Which of the following is NOT a type of probability sampling?

A) Simple random sampling
B) Stratified random sampling
C) **Quota sampling**
D) Systematic random sampling

Answer: **C) Quota sampling**

Explanation: Quota sampling is a non-probability sampling method where units are selected based on pre-determined quotas. Probability sampling methods include randomization to avoid bias.

Q253. What is a key limitation of simple random sampling (SRS)?

A) Low cost and convenient
B) Can be used only for non-homogeneous populations
C) **Time-consuming for large populations**
D) Does not use random numbers

Answer: **C) Time-consuming for large populations**

Explanation: Simple random sampling becomes cumbersome and time-consuming when dealing with large populations, as selecting each unit can be labor-intensive without computational tools.

Q254. Which sampling method involves selecting every kth unit after a random starting point?

A) Simple random sampling
B) **Systematic random sampling**
C) Multistage sampling
D) Stratified random sampling

Answer: **B) Systematic random sampling**

Explanation: In systematic random sampling, a starting point is selected randomly, and then every kth unit is chosen until the desired sample size is achieved.

Q255. When is stratified random sampling particularly useful?

A) When the population is small
B) When population variability is low
C) **When the population is heterogeneous**
D) When a single stage sampling is required

Answer: **C) When the population is heterogeneous**

Explanation: Stratified random sampling is used to ensure each subgroup (stratum) within a heterogeneous population is adequately represented, making the overall sample more reflective of the population.

Q256. Which of the following is a key feature of multistage sampling?

A) **Sampling is conducted in multiple stages**
B) A fixed interval is used for selection
C) All units are homogeneous
D) Only non-random sampling is involved

Answer: **A) Sampling is conducted in multiple stages**

Explanation: Multistage sampling involves dividing the sampling procedure into two or more stages, often for large or complex populations, making it a versatile and practical method.

Q257. What is a major disadvantage of judgment sampling?

A) **It does not allow generalization to the population**
B) It is very costly
C) It is time-consuming
D) Requires stratification

Answer: **A) It does not allow generalization to the population**

Explanation: Since judgment sampling relies on the researcher's subjective choice of units, it cannot guarantee a representative sample, making it difficult to generalize findings to the broader population.

Q258. Which type of sampling is often used when the population is difficult to reach or identify?

A) Stratified sampling
B) **Snowball sampling**
C) Quota sampling
D) Systematic sampling

Answer: **B) Snowball sampling**

Explanation: Snowball sampling is useful when studying hard-to-reach or hidden populations, as it involves participants recruiting others who meet the study criteria.

Q259. What is the difference between quota sampling and stratified sampling?

A) Stratified sampling is a non-probability method
B) Quota sampling is based on random selection
C) **Quota sampling uses judgment, while stratified sampling uses random selection**
D) Stratified sampling does not require population grouping

Answer: **C) Quota sampling uses judgment, while stratified sampling uses random selection**

Explanation: In quota sampling, the researcher selects units based on predefined quotas using judgment, whereas in stratified sampling, units are randomly chosen from each stratum to reduce bias.

Q260. Which of the following is an advantage of judgment sampling?

A) Suitable for large-scale surveys
B) **Low cost and quick**
C) Avoids all types of bias
D) Representative of all population segments

Answer: **B) Low cost and quick**

Explanation: Judgment sampling is advantageous for its low cost and speed, but it may not provide a representative sample due to its reliance on subjective selection criteria.

UNIT 7

DATA PRESENTATION

Q261. What is a frequency distribution?

A) **An arrangement of data showing the count of observations in each category**
B) A graph showing cumulative values
C) A statistical test for correlation
D) A measure of central tendency

Answer: **A) An arrangement of data showing the count of observations in each category**

Explanation: A frequency distribution is a method of organizing data into categories and counting the number of observations in each category.

Q262. What type of data is typically used for creating frequency distributions?

A) Numerical data only
B) **Nominal and ordinal data**

C) Continuous data only
D) None of the above

Answer: **B) Nominal and ordinal data**

Explanation: Frequency distributions are often used for nominal and ordinal data, which can be grouped into categories for counting and analysis.

Q263. What is the purpose of using tally bars in frequency distribution?

A) To determine central tendency
B) To represent numerical values
C) **To simplify the counting process**
D) To show the relationship between variables

Answer: **C) To simplify the counting process**

Explanation: Tally bars are used to make counting large numbers of observations more manageable and to provide a visual representation of frequency.

Q264. Which of the following statements is true for a histogram?

A) **It is used for continuous data arranged into class intervals**
B) It is used for nominal data
C) It is used for discrete data only
D) Bars are separated with gaps

Answer: **A) It is used for continuous data arranged into class intervals**

Explanation: A histogram is appropriate for representing continuous data in the form of class intervals, with the area of each rectangle representing frequency.

Q265. What is a frequency polygon?

A) A diagram with gaps between bars
B) **A line graph obtained by joining midpoints of histogram rectangles**
C) A circular graph representing categories
D) A diagram with a single bar

Answer: **B) A line graph obtained by joining midpoints of histogram rectangles**

Explanation: A frequency polygon is created by connecting the midpoints of the top of each bar in a histogram, forming a continuous line.

Q266. Why do we add two additional class intervals on each end of the histogram when creating a frequency polygon?

A) To increase the sample size
B) To match the scale
C) **To ensure the area under the polygon is equal to that under the histogram**
D) To create overlapping intervals

Answer: **C) To ensure the area under the polygon is equal to that under the histogram**

Explanation: The additional intervals are used to maintain the total area under the frequency polygon, making it comparable to the area under the histogram.

Q267. For which type of data is a bar diagram most appropriate?

A) Continuous data
B) Discrete data
C) **Nominal data**
D) Interval data

Answer: **C) Nominal data**

Explanation: Bar diagrams are typically used for nominal data where categories are distinguished, and the height of the bars represents the value of the variable.

Q268. Which of the following is NOT a characteristic of bar diagrams?

A) Bars are separated with equal gaps
B) **The width of the bars conveys the value of the variable**
C) The height of the bar represents the variable's

value
D) Bars are used to represent categories

Answer: **B) The width of the bars conveys the value of the variable**

Explanation: In bar diagrams, the height of the bars represents the value, while the width does not convey any specific information and is simply for visual distinction.

Q269. When should a histogram NOT be used?

A) When dealing with class intervals
B) When the data is continuous
C) When the data is large
D) **When the data is discrete**

Answer: **D) When the data is discrete**

Explanation: Histograms are designed for continuous data in class intervals. Discrete data should not be displayed using histograms; bar charts are more suitable.

Q270. Which type of data can be represented using both frequency distributions and bar diagrams?

A) **Nominal data**
B) Continuous data
C) Interval data
D) Ratio data

Answer: **A) Nominal data**

Explanation: Nominal data, which classifies observations into categories, can be effectively represented using both frequency distributions and bar diagrams.

Q271. What is the primary use of a pie chart?

A) **To show the share of different components in a variable**
B) To display trends over time
C) To compare two variables
D) To illustrate the frequency of discrete data

Answer: **A) To show the share of different components in a variable**

Explanation: A pie chart is used to visually represent how different components contribute to a whole, showing their share in the total value.

Q272. What is the total angle in a pie chart?

A) 180°
B) 270°
C) **360°**
D) 90°

Answer: **C) 360°**

Explanation: A pie chart is a circular representation, and a complete circle has a total angle of 360°.

Q273. Which of the following is an appropriate use of a pie chart?

A) Showing monthly temperatures
B) **Representing library expenditure on different heads**
C) Tracking sales over a period
D) Displaying employee ages

Answer: **B) Representing library expenditure on different heads**

Explanation: Pie charts are best suited for showing the proportion of different categories within a single variable, such as expenditure on various categories.

Q274. What type of data is best represented using a pie chart?

A) **Categorical data**
B) Continuous data
C) Discrete data
D) Numerical data only

Answer: **A) Categorical data**

Explanation: Pie charts are used to represent categorical data, showing the percentage distribution of categories within a single variable.

Q275. What is a simple bar diagram used for?

A) To represent changes over time
B) To show cumulative frequency
C) To display components of a phenomenon
D) **To present a single variable**

Answer: **D) To present a single variable**

Explanation: A simple bar diagram is used to display the value of a single variable across categories.

Q276. What differentiates a sub-divided bar diagram from a simple bar diagram?

A) The height of the bars
B) The use of different colors
C) **It represents various components of a phenomenon**
D) It uses a circular format

Answer: **C) It represents various components of a phenomenon**

Explanation: A sub-divided bar diagram breaks down a single bar into multiple segments, each representing a different component of a phenomenon.

Q277. When is it appropriate to use a sub-divided bar diagram?

A) When comparing a single category
B) **When showing the distribution of components within a variable**
C) When plotting continuous data
D) When illustrating time-series data

Answer: **B) When showing the distribution of components within a variable**

Explanation: Sub-divided bar diagrams are used to show the contribution of individual components to the total value of a variable.

Q278. Which type of chart is more suitable for comparing the relative sizes of parts to a whole?

A) Line chart
B) **Pie chart**
C) Histogram
D) Scatter plot

Answer: **B) Pie chart**

Explanation: Pie charts are ideal for comparing the sizes of individual components relative to the total, visually depicting proportions in a clear manner.

Q279. What is the limitation of using a pie chart?

A) It cannot represent percentages
B) It cannot show changes over time
C) **It is difficult to compare slices with similar values**
D) It cannot include labels

Answer: **C) It is difficult to compare slices with similar values**

Explanation: When slices in a pie chart have similar values, it becomes challenging to distinguish between them, limiting the clarity of the comparison.

Q280. Which of the following should be avoided when creating a pie chart?

A) Using different colors for each slice
B) **Using too many categories**
C) Labeling each slice
D) Showing percentages

Answer: **B) Using too many categories**

Explanation: A pie chart becomes cluttered and difficult to interpret when it includes too many categories, so it's best to limit the number of slices for clear visualization.

UNIT 8

STATISTICAL TECHNIQUES

Q281. What are the five important measures of central tendency?

A) Range, variance, median, mode, geometric mean
B) **Arithmetic mean, median, mode, geometric mean, harmonic mean**
C) Standard deviation, median, variance, harmonic mean, mode
D) Frequency, median, arithmetic mean, standard deviation, range

Answer: **B) Arithmetic mean, median, mode, geometric mean, harmonic mean**

Explanation: The five primary measures of central tendency include arithmetic mean, median, mode, geometric mean, and harmonic mean.

Q282. Which measure of central tendency is most known as the 'average'?

A) Median
B) Mode
C) **Arithmetic mean**
D) Harmonic mean

Answer: **C) Arithmetic mean**

Explanation: The arithmetic mean, often referred to as the 'mean' or 'average,' is calculated by dividing the sum of all observations by the number of observations.

Q283. Which two measures of central tendency are less frequently used due to their specific applications?

A) Median and mode
B) **Geometric mean and harmonic mean**
C) Arithmetic mean and median
D) Mode and harmonic mean

Answer: **B) Geometric mean and harmonic mean**

Explanation: Geometric mean and harmonic mean have specific uses and are thus not as commonly used as the other measures of central tendency.

Q284. What is the symbol used to represent the arithmetic mean?

A) Σ
B) **$\bar{X}$ (X-bar)**
C) μ
D) x

Answer: **B) $\bar{X}$ (X-bar)**

Explanation: The arithmetic mean is denoted by $\bar{X}$, read as "X-bar," indicating the average value of a variable.

Q285. In the arithmetic mean formula, what does the symbol 'Σ' indicate?

A) Mean of the observations
B) Number of observations
C) **Sum of a variable**
D) Frequency of a variable

Answer: **C) Sum of a variable**

Explanation: The symbol 'Σ' (sigma) represents the summation of a series of numbers or variables.

Q286. How is arithmetic mean calculated for observations in a frequency distribution?

A) By dividing the sum of squared values by total frequency
B) **By dividing the sum of all observations by the total number of observations**
C) By taking the median value of the observations
D) By adding the mid-values of class intervals

Answer: **B) By dividing the sum of all observations by the total number of observations**

Explanation: The arithmetic mean is calculated as the sum of all observations divided by the total number of observations.

Q287. What is the value of the median in a series of 5 observations: 2, 5, 9, 14, 20?

A) 5
B) 9
C) 14
D) **9**

Answer: **B) 9**

Explanation: The median is the middle-most observation in an ordered series. In this series, 9 is the third (middle) value, making it the median.

Q288. What is the median of the series: 3, 8, 15, 25, 35, 43?

A) 15
B) 25
C) 20
D) **20**

Answer: **D) 20**

Explanation: When the number of observations is even, the median is calculated as the average of the two middle values. Here, (15 + 25) / 2 = 20.

Q289. Which measure of central tendency is used when observations are classified into class intervals in the case of continuous data?

A) **Mid-value of the class intervals**
B) Mode
C) Median
D) Harmonic mean

Answer: **A) Mid-value of the class intervals**

Explanation: When data is continuous and classified into class intervals, the mid-value of each class interval is used to represent individual observations within that interval.

Q290. What does the median represent in a dataset?

A) **The middle-most observation in an ordered series**
B) The most frequently occurring value
C) The average value
D) The sum of the observations

Answer: **A) The middle-most observation in an ordered series**

Explanation: The median is the middle value of an ordered dataset, where half of the observations are on either side of it.

Q291. What is the mode in a dataset?

A) **The observation with the highest frequency**
B) The middle value of the data
C) The average of the data
D) The difference between the highest and lowest values

Answer: **A) The observation with the highest frequency**

Explanation: The mode is the value or observation that occurs most frequently in a dataset.

Q292. How do we identify the mode in continuous data?

A) By finding the average
B) By determining the mid-point of the classes
C) **By identifying the modal class with the highest frequency**
D) By calculating the range

Answer: **C) By identifying the modal class with the highest frequency**

Explanation: In continuous data, mode is identified by finding the class interval (modal class) that has the highest frequency.

Q293. What is the measure used to represent the degree of heterogeneity in a dataset?

A) Arithmetic mean
B) Median
C) **Dispersion**
D) Correlation

Answer: **C) Dispersion**

Explanation: Dispersion indicates the extent to which observations vary among themselves, representing the degree of heterogeneity in a dataset.

Q294. What does the range represent in a dataset?

A) **The difference between the largest and smallest observations**
B) The frequency of the highest observation
C) The sum of all observations
D) The average value of the data

Answer: **A) The difference between the largest and smallest observations**

Explanation: Range is calculated as the difference between the highest and lowest values in a dataset, indicating the spread of the data.

Q295. What is the range for the data set {44, 15, 28, 2}?

A) 15
B) **42**
C) 28
D) 2

Answer: **B) 42**

Explanation: The range is calculated as the difference between the highest value (44) and the lowest value (2), giving 44 - 2 = 42.

Q296. What is the value of the range for the data set {17, 17, 17, 17}?

A) 17
B) **0**
C) 34
D) 1

Answer: **B) 0**

Explanation: The range is 0 when all values in a dataset are equal, as there is no variability. Here, 17 - 17 = 0.

Q297. What is variance?

A) **The most widely used measure of dispersion**
B) The square root of standard deviation
C) The middle-most observation
D) The highest observation minus the lowest observation

Answer: **A) The most widely used measure of dispersion**

Explanation: Variance measures the dispersion of a set of data points around their mean and is commonly used in statistical analysis.

Q298. How is standard deviation defined?

A) The variance of all observations
B) The sum of observations divided by total observations
C) **The positive square root of variance**
D) The mean of observations

Answer: **C) The positive square root of variance**

Explanation: Standard deviation is calculated as the square root of variance and measures the spread of data points around the mean.

Q299. What is the coefficient of variation used for?

A) To find the range of a dataset
B) To determine the correlation between variables
C) **To compare variability among different series of data**
D) To calculate the median of data

Answer: **C) To compare variability among different series of data**

Explanation: Coefficient of variation is used to compare the degree of variation between datasets with different units or scales.

Q300. What does correlation measure?

A) The average of observations
B) The dispersion of data
C) **The degree of relationship between two variables**
D) The sum of all observations

Answer: **C) The degree of relationship between two variables**

Explanation: Correlation measures the extent to which two variables are related. If movement in one variable is accompanied by movement in another, they are said to be correlated.

Q301. What type of data is involved in correlation analysis?

A) **Bivariate data**
B) Univariate data
C) Multivariate data
D) Continuous data

Answer: **A) Bivariate data**

Explanation: Correlation analysis involves studying the relationship between two variables, which is known as bivariate data.

Q302. What is the correlation coefficient?

A) **A single figure representing the degree of relationship between two variables**
B) The range of a data set
C) The mean of observations
D) The sum of two variables

Answer: **A) A single figure representing the degree of relationship between two variables**

Explanation: The correlation coefficient is a numerical measure that quantifies the strength and direction of the relationship between two variables.

Q303. What is a scatter diagram used for?

A) To find the mode of the data
B) To determine the range
C) **To visualize the relationship between two variables**
D) To calculate the median

Answer: **C) To visualize the relationship between two variables**

Explanation: A scatter diagram (or scatter plot) is used to plot points for paired data on a graph to visually analyze the relationship between two variables.

Q304. What do closely grouped points in a scatter diagram indicate?

A) **A strong relationship between the variables**
B) No relationship between the variables
C) High dispersion of data
D) Data arranged in descending order

Answer: **A) A strong relationship between the variables**

Explanation: When the points in a scatter diagram are closely grouped and follow a clear pattern, it indicates a strong correlation between the variables.

Q305. What does a greater scatter of points on a scatter diagram imply?

A) **Less relationship between the variables**
B) Strong relationship between the variables
C) Equal distribution of data
D) Perfect positive correlation

Answer: **A) Less relationship between the variables**

Explanation: A greater scatter of points shows that the variables are less correlated, meaning the relationship between them is weaker.

Q306. What is Spearman's rank correlation used for?

A) To measure the mean of data
B) **To find the correlation when data is in ranks**

C) To calculate the range of data
D) To predict values

Answer: **B) To find the correlation when data is in ranks**

Explanation: Spearman's rank correlation is used when the data is ordinal (i.e., in ranks) rather than having absolute magnitudes.

Q307. What is the range of Spearman's rank correlation coefficient?

A) 0 to +1
B) 0 to 10
C) **-1 to +1**
D) -10 to +10

Answer: **C) -1 to +1**

Explanation: Similar to Pearson's correlation, Spearman's rank correlation coefficient ranges from -1 (perfect negative correlation) to +1 (perfect positive correlation).

Q308. What does a Spearman's rank correlation of 0 indicate?

A) **No association between the variables**
B) Perfect positive relationship
C) Perfect negative relationship
D) High variability

Answer: **A) No association between the variables**

Explanation: A Spearman's rank correlation of 0 indicates that there is no relationship or association between the variables.

Q309. When should Spearman's rank correlation be used instead of Pearson's correlation?

A) When data is measured on the interval scale
B) When there is only one variable
C) **When data is ordinal (ranked)**
D) When there is no variability

Answer: **C) When data is ordinal (ranked)**

Explanation: Spearman's rank correlation is preferred when the data is ordinal or when actual values are not available but ranks can be assigned.

Q310. What does a positive value of Spearman's rank correlation indicate?

A) Inverse relationship between variables
B) **Direct relationship between variables**
C) No association
D) Equal distribution of data

Answer: **B) Direct relationship between variables**

Explanation: A positive value of Spearman's rank correlation indicates that as one variable increases, the other variable tends to increase as well.

Q311. What does a negative value of Spearman's rank correlation suggest?

A) Equal variability
B) **Inverse relationship between variables**
C) Strong positive relationship
D) Zero variability

Answer: **B) Inverse relationship between variables**

Explanation: A negative Spearman's rank correlation means that as one variable increases, the other decreases, showing an inverse relationship.

Q312. What does regression analysis help to understand?

A) **The relationship between variables and to predict values**
B) The median of a dataset
C) The mode of a dataset
D) The difference between the highest and lowest observations

Answer: **A) The relationship between variables and to predict values**

Explanation: Regression analysis is a statistical tool used to understand how one variable (dependent) changes when another variable (independent) changes, and it helps in making predictions.

Q313. What is the dependent variable in a regression analysis?

A) The variable that is measured in ranks
B) The variable used to determine correlation
C) **The variable that is predicted**
D) The variable that does not change

Answer: **C) The variable that is predicted**

Explanation: In regression analysis, the dependent variable is the one whose value is being predicted based on changes in the independent variable.

Q314. Which method should be used when data is measured in ranks and not in absolute values?

A) Pearson's correlation
B) **Spearman's rank correlation**
C) Scatter diagram
D) Range calculation

Answer: **B) Spearman's rank correlation**

Explanation: Spearman's rank correlation is used for ordinal data when the exact values are not available, but ranks can be assigned to the observations.

Q315. What is the primary goal of fitting a regression line?

A) To find the range of data
B) To calculate the mode
C) **To minimize the error values**
D) To find the median

Answer: **C) To minimize the error values**

Explanation: The objective in fitting a regression line is to minimize the error values, which is achieved through the method of least squares.

Q316. What method is used to minimize the error values in regression analysis?

A) Correlation method
B) **Least squares method**
C) Range method
D) Variance method

Answer: **B) Least squares method**

Explanation: The method of least squares is used to minimize the sum of squared differences between observed and expected values.

Q317. What is the general linear regression equation?

A) $Y = X + a$
B) $Y = X + c$
C) **$Y = a + bX$**
D) $Y = bX + c$

Answer: **C) $Y = a + bX$**

Explanation: The general form of a linear regression equation is $Y = a + bX$, where 'a' is the intercept and 'b' is the regression coefficient (slope).

Q318. What is the regression coefficient represented by in the linear regression equation?

A) a
B) c
C) X
D) **b**

Answer: **D) b**

Explanation: In the equation $Y = a + bX$, 'b' is the regression coefficient that represents the slope of the regression line.

Q319. What do the normal equations help to calculate in regression analysis?

A) The mean
B) The mode

C) **The values of 'a' and 'b'**
D) The variance

Answer: **C) The values of 'a' and 'b'**

Explanation: The normal equations are used to calculate the values of 'a' (intercept) and 'b' (regression coefficient) in the linear regression equation.

Q320. What is the square of the correlation coefficient called?

A) Regression equation
B) **Coefficient of determination**
C) Range value
D) Error value

Answer: **B) Coefficient of determination**

Explanation: The square of the correlation coefficient (r^2) is known as the coefficient of determination, which indicates the proportion of variance explained by the independent variable.

Q321. What is the relationship between regression coefficients and correlation coefficients?

A) Regression coefficients are always greater than correlation coefficients
B) **The product of regression coefficients is equal to the square of correlation coefficient**
C) Regression coefficients are always less than correlation coefficients
D) There is no relationship

Answer: **B) The product of regression coefficients is equal to the square of correlation coefficient**

Explanation: The product of two regression coefficients is equal to the square of the correlation coefficient (r^2).

Q322. What does a negative regression coefficient indicate?

A) Positive relationship
B) **Negative correlation**
C) High variability
D) Equal distribution

Answer: **B) Negative correlation**

Explanation: A negative regression coefficient indicates an inverse relationship, meaning as one variable increases, the other decreases.

Q323. What happens if the coefficient of determination is closer to zero?

A) The independent variable explains most of the variations in the dependent variable
B) There is a strong positive correlation
C) **The independent variable does not explain the variations in the dependent variable**
D) The regression line is a perfect fit

Answer: **C) The independent variable does not explain the variations in the dependent variable**

Explanation: A coefficient of determination closer to zero indicates that the independent variable has little to no explanatory power over the dependent variable.

Q324. What does a coefficient of determination closer to one signify?

A) High variability
B) **Greater explanatory power of the independent variable**
C) Negative correlation
D) Equal distribution

Answer: **B) Greater explanatory power of the independent variable**

Explanation: When the coefficient of determination is close to one, it indicates that the independent variable can explain most of the variation in the dependent variable.

Q325. What is the regression coefficient 'b' referred to as?

A) **Slope of the regression line**
B) Mode of the data
C) Median of the data
D) Range of data

Answer: **A) Slope of the regression line**

Explanation: The regression coefficient 'b' represents the slope of the regression line, indicating the rate of change in the dependent variable for a unit change in the independent variable.

Q326. What type of regression involves one dependent variable and more than one independent variable?

A) Simple linear regression
B) **Multiple regression**
C) Non-linear regression
D) Scatter diagram

Answer: **B) Multiple regression**

Explanation: Multiple regression involves one dependent variable and more than one independent variable, allowing for a more complex analysis.

Q327. What is the purpose of transforming non-linear equations into linear forms?

A) To calculate the mean
B) **To simplify the process of finding parameter values**
C) To measure range
D) To find the median

Answer: **B) To simplify the process of finding parameter values**

Explanation: Transforming non-linear equations into linear forms helps apply the linear least squares method for easier calculation of parameter values.

Q328. What is the main advantage of regression analysis?

A) To find the range
B) To calculate the median
C) **To predict values of the dependent variable**
D) To find the mode

Answer: **C) To predict values of the dependent variable**

Explanation: Regression analysis is used for prediction, helping to forecast values of the dependent variable based on known values of the independent variable.

Q329. What does the value of 'a' represent in the linear regression equation?

A) **Intercept**
B) Slope
C) Range
D) Error

Answer: **A) Intercept**

Explanation: In the equation $Y = a + bX$, 'a' represents the intercept, which is the value of Y when X is zero.

Q330. What is time series analysis primarily concerned with?

A) **The relationship between a dependent variable and time**
B) The cause-and-effect relationship between two independent variables
C) The variability of data in a single observation
D) The distribution of data at a specific point in time

Answer: **A) The relationship between a dependent variable and time**

Explanation: Time series analysis examines how a dependent variable varies with time, treating time as the independent variable.

Q331. Which of the following is NOT an example of time series data?

A) Monthly book issues in a library
B) Annual sales of a publisher
C) **The height of students in a single classroom**
D) Daily temperature readings

Answer: **C) The height of students in a single classroom**

Explanation: The height of students in a single classroom does not vary over time in the context of time series analysis; it is a snapshot rather than a time-dependent measure.

Q332. What is one of the important tasks for librarians and information managers regarding time series data?

A) To classify data
B) To measure variability
C) **To make future estimates**
D) To collect data

Answer: **C) To make future estimates**

Explanation: Librarians and information managers analyze time series data to make forecasts and informed decisions for future planning.

Q333. Which of the following is NOT a component of time series?

A) Secular trend
B) Seasonal variation
C) Cyclical variation
D) **Static variation**

Answer: **D) Static variation**

Explanation: Static variation is not recognized as a component of time series; the main components are secular trend, seasonal variation, cyclical variation, and irregular variation.

Q334. What does the term "secular trend" refer to in time series analysis?

A) Short-term fluctuations in data
B) **Long-term changes in data**
C) Variations that occur within a year
D) Random changes due to unforeseen events

Answer: **B) Long-term changes in data**

Explanation: Secular trend refers to the long-term movement in data, indicating a general tendency to increase or decrease over time.

Q335. What are seasonal variations in time series?

A) Changes due to long-term economic cycles
B) **Changes that occur regularly within a year**
C) Unpredictable changes due to natural disasters
D) Fluctuations that do not show any pattern

Answer: **B) Changes that occur regularly within a year**

Explanation: Seasonal variations refer to patterns that repeat within a year, often influenced by factors such as weather or holidays.

Q336. How do cyclical variations differ from seasonal variations?

A) They occur over a shorter time frame
B) They are always predictable
C) **They last longer than one year**
D) They are caused by natural events

Answer: **C) They last longer than one year**

Explanation: Cyclical variations result from economic cycles and can span multiple years, unlike seasonal variations which recur within a single year.

Q337. Which of the following best describes irregular variations in time series?

A) Regular patterns that can be forecasted
B) **Unpredictable changes due to unforeseen**

events
C) Changes that occur at regular intervals
D) Patterns influenced by seasonal effects

Answer: **B) Unpredictable changes due to unforeseen events**

Explanation: Irregular variations are caused by unpredictable factors such as natural disasters or social events.

Q338. What is the multiplicative model in time series analysis?

A) Y = T + S + C + I
B) **Y = T × S × C × I**
C) Y = T - S + C - I
D) Y = T + S × C × I

Answer: **B) Y = T × S × C × I**

Explanation: The multiplicative model expresses the relationship among the components of time series data as a product.

Q339. In the additive model of time series analysis, how is Y represented?

A) Y = T × S × C × I
B) **Y = T + S + C + I**
C) Y = T - S - C + I
D) Y = T × S - C + I

Answer: **B) Y = T + S + C + I**

Explanation: The additive model expresses the total as the sum of its components: trend, seasonal, cyclical, and irregular variations.

Q340. Why is time series analysis important for librarians?

A) It helps in cataloging books
B) **It aids in forecasting future trends**
C) It eliminates the need for data collection
D) It focuses only on past data

Answer: **B) It aids in forecasting future trends**

Explanation: Time series analysis allows librarians to predict future trends based on historical data, helping with resource planning and management.

Q341. What is the primary purpose of the method of least squares in regression analysis?

A) To maximize the error terms
B) **To minimize the sum of squares of the error terms**
C) To fit data into nonlinear models
D) To determine the independent variable

Answer: **B) To minimize the sum of squares of the error terms**

Explanation: The method of least squares aims to minimize the differences between observed and expected values by reducing the sum of the squared errors.

Q342. In time series analysis, what variable does the method of least squares treat as the independent variable?

A) The dependent variable
B) **Time (t)**
C) The error term
D) The sample size (n)

Answer: **B) Time (t)**

Explanation: In time series analysis, the independent variable is time, denoted as 't', which is used to analyze trends over time.

Q343. Which of the following is the equation for a straight line fitted using the method of least squares?

A) Y = a + bX
B) **Y = a + bt**
C) Y = a - bt
D) Y = a × bt

Answer: **B) Y = a + bt**

Explanation: The equation Y=a+btY = a + btY=a+bt represents a straight line in the context of least

squares fitting, where 'a' is the intercept and 'b' is the slope.

Q344. What are the normal equations derived from the least squares method for the linear equation Y=a+btY = a + btY=a+bt?

A) Y=na+btY = na + btY=na+bt and tY=at+btY = at + btY=at+b
B) **Y=na+btY = na + btY=na+bt and tY=at+bt2tY = at + bt^2tY=at+bt2**
C) Y=a+btY = a + btY=a+bt and tY=a+btY = a + btY=a+b
D) Y=a+bt2Y = a + bt^2Y=a+bt2 and tY=a+btY = a + btY=a+b

Answer: **B) Y=na+btY = na + btY=na+bt and tY=at+bt2tY = at + bt^2tY=at+bt2**

Explanation: These are the normal equations used to determine the constants 'a' and 'b' in the method of least squares for a linear regression model.

Q345. What do the constants 'a' and 'b' represent in the linear regression equation Y=a+btY = a + btY=a+bt?

A) **'a' is the intercept and 'b' is the slope**
B) 'a' is the sample size and 'b' is the error term
C) 'a' is the dependent variable and 'b' is the independent variable
D) 'a' and 'b' are both dependent variables

Answer: **A) 'a' is the intercept and 'b' is the slope**

Explanation: In the regression equation Y=a+btY = a + btY=a+bt, 'a' represents the point where the line intersects the Y-axis (intercept), and 'b' represents the rate of change in Y for each unit increase in t (slope).

Q346. In the context of the method of least squares, what does 'n' indicate?

A) The error term
B) **The number of observations in the sample**
C) The dependent variable
D) The independent variable

Answer: **B) The number of observations in the sample**

Explanation: In the least squares method, 'n' denotes the total count of data points used in the regression analysis.

Q347. How is the error minimized in the least squares method?

A) By maximizing the observed values
B) By setting error terms equal to zero
C) **By minimizing the sum of squares of the error terms**
D) By averaging the observed values

Answer: **C) By minimizing the sum of squares of the error terms**

Explanation: The least squares method seeks to minimize the squared differences between observed and predicted values to achieve the best fit for the regression line.

Q348. Which of the following best describes the relationship established by the least squares method?

A) A static relationship
B) A nonlinear relationship
C) **A linear relationship between dependent and independent variables**
D) An unpredictable relationship

Answer: **C) A linear relationship between dependent and independent variables**

Explanation: The least squares method is primarily used to find a linear relationship between a dependent variable and one or more independent variables.

Q349. Why is it important to derive the normal equations in the least squares method?

A) To determine the number of variables in the data
B) To assess the error of the model
C) **To calculate the coefficients that define the regression line**
D) To validate the results with external data

Answer: **C) To calculate the coefficients that define the regression line**

Explanation: Normal equations are essential for solving for the coefficients 'a' and 'b' in the regression equation, which define the relationship between the variables.

Q350. What is the key outcome of applying the least squares method to regression analysis?

A) **Estimation of the relationship between variables**
B) Collection of new data points
C) Identification of outliers in the data
D) Validation of existing models

Answer: **A) Estimation of the relationship between variables**

Explanation: The least squares method enables researchers to estimate how changes in the independent variable(s) affect the dependent variable, facilitating predictions and insights.

UNIT 9

STATISTICAL PACKAGES

Q351. What are the two primary types of data in statistical measurement?

A) Qualitative and binary
B) **Qualitative and quantitative**
C) Categorical and numerical
D) Discrete and continuous

Answer: **B) Qualitative and quantitative**

Explanation: Statistical data can be classified into qualitative (descriptive) and quantitative (numerical) types.

Q352. Which of the following is a characteristic of discrete data?

A) It can take any value within a range.
B) It is measured on an interval scale.
C) **It consists of distinct and separate values.**
D) It cannot be counted.

Answer: **C) It consists of distinct and separate values.**

Explanation: Discrete data is made up of distinct, separate values that can be counted, such as the number of books in a library.

Q353. What is the main statistic computed for data measured on a nominal scale?

A) Mean
B) Median
C) **Mode**
D) Variance

Answer: **C) Mode**

Explanation: The mode is the main statistic used for analyzing nominal scale data, which categorizes items without any quantitative information.

Q354. Which scale of measurement allows for rank ordering but not for quantifying the differences between values?

A) **Ordinal Scale**
B) Nominal Scale
C) Interval Scale
D) Ratio Scale

Answer: **A) Ordinal Scale**

Explanation: Ordinal scales allow items to be ranked but do not indicate the magnitude of differences between the ranks.

Q355. Which of the following best describes an interval scale?

A) It has a true zero point.
B) **It does not have a true zero point and allows for equal intervals between values.**
C) It allows for rank ordering without equal intervals.
D) It is purely qualitative in nature.

Answer: **B) It does not have a true zero point and allows for equal intervals between values.**

Explanation: Interval scales have equal intervals but lack an absolute zero, making it impossible to make ratio comparisons.

Q356. Which scale of measurement has an identifiable absolute zero point?

A) Nominal Scale
B) Ordinal Scale
C) Interval Scale
D) **Ratio Scale**

Answer: **D) Ratio Scale**

Explanation: Ratio scales feature a true zero point, allowing for meaningful statements about ratios between measurements.

Q357. What type of data is best suited for computing the mean?

A) **Quantitative data measured on interval or ratio scales**
B) Nominal data
C) Ordinal data
D) Qualitative data

Answer: **A) Quantitative data measured on interval or ratio scales**

Explanation: Means can be computed for quantitative data measured on interval or ratio scales, where the values have real numeric meaning.

Q358. Which of the following statements is true regarding nominal measurement?

A) It involves ordered categories with equal intervals.
B) It allows for quantitative comparison of items.
C) **It classifies items into distinct categories without any quantitative value.**
D) It computes the mean and variance of data.

Answer: **C) It classifies items into distinct categories without any quantitative value.**

Explanation: Nominal measurement categorizes data without conveying any numerical information or rank order.

Q359. How do ordinal variables differ from nominal variables?

A) Ordinal variables can be counted, while nominal variables cannot.
B) Ordinal variables do not allow for ranking.
C) **Ordinal variables allow for ranking but do not have equal intervals.**
D) Ordinal variables are qualitative, while nominal variables are quantitative.

Answer: **C) Ordinal variables allow for ranking but do not have equal intervals.**

Explanation: Ordinal variables provide a rank order but do not quantify the exact differences between the ranks.

Q360. Why is it impractical to compute the mean of nominal measurements?

A) Because nominal data can be ranked.
B) Because nominal data can take any value.
C) **Because nominal data does not convey quantitative information.**
D) Because nominal data does not have distinct categories.

Answer: **C) Because nominal data does not convey quantitative information.**

Explanation: Nominal data categorizes items without providing numeric values, making mean calculation meaningless.

Q361. What is one of the primary functions of statistics in research?

A) To collect qualitative data
B) To **summarise and describe data**
C) To create databases
D) To define research problems

Answer: **B) To summarise and describe data**

Explanation: One of the key functions of statistics is to summarize and describe data to provide an overview briefly.

Q362. Which statistical technique is commonly used to measure the spread of data?

A) Regression analysis
B) **Variance analysis**
C) Hypothesis testing
D) Descriptive statistics

Answer: **B) Variance analysis**

Explanation: Variance analysis measures the spread of data, allowing researchers to understand how much data varies from the mean.

Q363. What type of data representation is typically used for nominal or ordinal data?

A) Histograms
B) Scatter plots
C) **Cross-tabulations and graphs**
D) Box plots

Answer: **C) Cross-tabulations and graphs**

Explanation: Nominal or ordinal data is often represented using cross-tabulations and various types of graphs for better visualization.

Q364. Which statistical method would you use to compare two or more populations?

A) **Cross-tabulations for nominal/ordinal data**
B) Descriptive statistics
C) Factor analysis
D) Linear regression

Answer: **A) Cross-tabulations for nominal/ordinal data**

Explanation: Cross-tabulations are used to compare groups when analyzing nominal or ordinal data.

Q365. To identify relationships in data, which method is appropriate for interval/ratio data?

A) Cross-tabulation
B) **Correlation coefficient and scatter plots**
C) Chi-square test
D) Frequency distribution

Answer: **B) Correlation coefficient and scatter plots**

Explanation: To identify relationships in interval or ratio data, calculating the correlation coefficient and using scatter plots are effective methods.

Q366. What statistical analysis technique helps in identifying groups of similar cases?

A) **Hierarchical cluster analysis**
B) Regression analysis
C) Variance analysis
D) ANOVA

Answer: **A) Hierarchical cluster analysis**

Explanation: Hierarchical cluster analysis is used to identify groups of similar cases based on their characteristics.

Q367. Which statistical method is used to identify groups of similar variables?

A) **Factor analysis**
B) Discriminant analysis
C) Linear regression
D) ANOVA

Answer: **A) Factor analysis**

Explanation: Factor analysis is conducted to identify groups of similar variables, helping in reducing data complexity.

Q368. What is the function of hypothesis testing in statistics?

A) To summarize data
B) To measure variance
C) To **compare groups and determine relationships**
D) To categorize nominal data

Answer: **C) To compare groups and determine relationships**

Explanation: Hypothesis testing is used to compare groups and assess the validity of relationships within the data.

Q369. Which of the following is a method to identify the characteristics of known groups?

A) **Discriminant analysis**
B) Regression analysis
C) Variance analysis
D) Cross-tabulation

Answer: **A) Discriminant analysis**

Explanation: Discriminant analysis is used to determine the characteristics that differentiate known groups from one another.

Q370. When working with interval/ratio data, what type of graph is useful for understanding the distribution of the data?

A) Pie chart
B) **Histogram with a normal curve**
C) Line graph
D) Bar chart

Answer: **B) Histogram with a normal curve**

Explanation: Histograms with a normal curve are effective for visualizing the distribution of interval or ratio data.

Q371. What is one of the main functionalities of Microsoft Excel?

A) To write text documents
B) To **perform calculations and data entry**
C) To create programming applications
D) To design graphic layouts

Answer: **B) To perform calculations and data entry**

Explanation: Microsoft Excel is primarily used for performing calculations and entering data in a worksheet format.

Q372. According to Pottel, what is a notable characteristic of Microsoft Excel?

A) It is a comprehensive statistical package.
B) It is difficult to use.
C) It has become a **standard for data storage for smaller data sets**.
D) It is only used by professional statisticians.

Answer: **C) It has become a standard for data storage for smaller data sets.**

Explanation: Excel has become a standard tool for data storage, especially for smaller datasets, due to its easy availability and user-friendly interface.

Q373. What is a limitation of using Microsoft Excel for statistical analysis?

A) It supports a wide range of statistical methods.
B) **Many statistical methods are not available**.
C) It is complex and hard to learn.
D) It does not allow data entry.

Answer: **B) Many statistical methods are not available.**

Explanation: Excel lacks many advanced statistical methods, making it inadequate for comprehensive statistical analysis beyond basic calculations.

Q374. How many rows and columns does an MS Excel worksheet contain?

A) 32,000 rows by 128 columns
B) **65,000 rows by 256 columns**
C) 10,000 rows by 100 columns
D) 100 rows by 1,000 columns

Answer: **B) 65,000 rows by 256 columns**

Explanation: An MS Excel worksheet consists of 65,000 rows and 256 columns, allowing for extensive data entry and analysis.

Q375. Which of the following tools in Excel is used for linear regression analysis?

A) ANOVA
B) **Regression analysis**
C) t-Test
D) Correlation

Answer: **B) Regression analysis**

Explanation: The regression analysis tool in Excel performs linear regression using the least squares method to fit a line through observations.

Q376. What does the descriptive statistics tool in Excel provide?

A) A summary of data in an unstructured format
B) **A report of univariate statistics for data**
C) A method for creating charts
D) Data storage solutions

Answer: **B) A report of univariate statistics for data**

Explanation: The descriptive statistics tool generates a report that includes measures like mean, median, and standard deviation, providing insights into central tendency and variability.

Q377. What is the purpose of the ANOVA tool in Excel?

A) To create graphical representations
B) **To perform variance analysis**
C) To compute sample means
D) To conduct linear regression

Answer: **B) To perform variance analysis**

Explanation: The ANOVA tool is used to analyze variance across different populations, allowing for comparison of means.

Q378. What does the t-Test in Excel help determine?

A) If two variables are correlated
B) **If two samples come from distributions with equal population means**
C) The average of a dataset
D) The trend of a dataset over time

Answer: **B) If two samples come from distributions with equal population means**

Explanation: The t-Test is used to test hypotheses regarding whether two samples originate from the same population means.

Q379. In Excel, which tool would you use to create a sample from a population?

A) Regression analysis
B) **Sampling analysis**
C) Moving average
D) Descriptive statistics

Answer: **B) Sampling analysis**

Explanation: The sampling analysis tool is used to create samples from a population based on specified input ranges.

Q380. What feature of Microsoft Excel allows users to format data types?

A) Data import wizard
B) **Cell formatting**

C) Graphical user interface
D) Macro programming

Answer: **B) Cell formatting**

Explanation: Users can choose data formats through cell formatting options, allowing for appropriate representation of various data types within the worksheet.

Q381. What does SPSS stand for?

A) Statistical Program for Scientific Studies
B) **Statistical Package for Social Sciences**
C) Statistical Procedures for Software Systems
D) Statistical Performance and Software Solutions

Answer: **B) Statistical Package for Social Sciences**

Explanation: SPSS is an acronym for Statistical Package for Social Sciences, indicating its primary use in social science research.

Q382. Who developed the SPSS statistical software system?

A) Harvard University graduates
B) **Three Stanford University graduate students**
C) MIT researchers
D) Oxford University professors

Answer: **B) Three Stanford University graduate students**

Explanation: The SPSS software system was developed in the late 1960s by three graduate students from Stanford University.

Q383. Which of the following file types can SPSS accept for data input?

A) Only *.xls files
B) **Multiple formats, including *.dbf, *.xls, and .txt*
C) Only text files
D) Only database files

Answer: **B) Multiple formats, including *.dbf, *.xls, and .txt*

Explanation: SPSS can import data from various file formats, including dBase, Excel, Lotus 123, and text files.

Q384. What type of analysis can the "Compare Means" module in SPSS perform?

A) **One-Way ANOVA and T Tests**
B) Only correlation analysis
C) Only descriptive statistics
D) Only data reduction analysis

Answer: **A) One-Way ANOVA and T Tests**

Explanation: The "Compare Means" module in SPSS is used to perform various statistical tests, including One-Sample T Test and One-Way ANOVA.

Q385. Which procedure in SPSS is used for factor analysis?

A) K-Means Cluster Analysis
B) **Factor analysis procedure**
C) Descriptive statistics procedure
D) Regression procedure

Answer: **B) Factor analysis procedure**

Explanation: The factor analysis procedure in SPSS is specifically designed for conducting factor analysis, which helps in data reduction and identifying underlying relationships.

Q386. What advantage does SPSS have over MS Excel regarding statistical output?

A) It is free to use.
B) **It provides more detailed statistical findings.**
C) It is easier to use.
D) It requires no training.

Answer: **B) It provides more detailed statistical findings.**

Explanation: SPSS offers more comprehensive output, including a wider range of statistical tests and measures, compared to Excel's simpler output.

Q387. Which of the following tests can be performed using SPSS?

A) Only t-Tests
B) **Chi-Square Tests and Binomial Tests**
C) Only ANOVA
D) Only regression analysis

Answer: **B) Chi-Square Tests and Binomial Tests**

Explanation: SPSS supports various statistical tests, including Chi-Square Tests, Binomial Tests, and others, allowing for extensive analysis of data.

Q388. What feature in SPSS helps users find the most suitable chart for their data?

A) Graph Wizard
B) **Chart Galleries by Data Structure**
C) Data Visualization Tool
D) Graph Selection Assistant

Answer: **B) Chart Galleries by Data Structure**

Explanation: The "Chart Galleries by Data Structure" feature in SPSS assists users in selecting the most appropriate chart based on the data structure.

Q389. Which type of analysis is performed using the General Linear Model (GLM) module in SPSS?

A) Descriptive statistics
B) **Univariate analysis**
C) Non-parametric analysis
D) Data classification

Answer: **B) Univariate analysis**

Explanation: The GLM Univariate procedure in SPSS is used for conducting univariate analyses, which involve analyzing one dependent variable at a time.

Q390. What does the "Classify" module in SPSS include?

A) Only regression analysis
B) **Cluster and Discriminant Analysis**
C) Only descriptive statistics
D) Only data reduction techniques

Answer: **B) Cluster and Discriminant Analysis**

Explanation: The "Classify" module in SPSS includes procedures for K-Means Cluster Analysis, Hierarchical Cluster Analysis, and Discriminant Analysis, which help in identifying and classifying groups within the data.

UNIT 10

OBSERVATION METHOD

Q391. What is the primary purpose of planning in the observation process?

A) To increase the number of observers
B) **To collect factual data effectively**
C) To ensure observer comfort
D) To enhance personal biases

Answer: **B) To collect factual data effectively**

Explanation: Planning is essential in the observation process to overcome limitations and ensure that accurate, factual data is collected.

Q392. Which of the following questions should be examined in advance for effective observation planning?

A) What is the budget for the study?
B) **What should be observed?**
C) Who will fund the research?
D) What is the location of the study?

Answer: **B) What should be observed?**

Explanation: Identifying what should be observed is a crucial question in planning for effective data collection through observation.

Q393. Why is it essential for planners to have comprehensive knowledge of the problem being studied?

A) To reduce the number of observers
B) To impress stakeholders
C) **To devise effective plans based on experience**
D) To ensure the research is funded

Answer: **C) To devise effective plans based on experience**

Explanation: Comprehensive knowledge of the problem enables planners to create well-informed and effective observation plans.

Q394. What is one of the first steps in the planning process for observation?

A) Identifying funding sources
B) **Examining the relevance of the observation method**
C) Recruiting participants
D) Selecting a research site

Answer: **B) Examining the relevance of the observation method**

Explanation: Determining whether the observation method is suitable for the research problem is a crucial initial step in planning.

Q395. What should researchers define during the planning stage regarding behavior?

A) Personal biases
B) **Operational definitions for the kinds of behavior**
C) The financial budget
D) The location of the study

Answer: **B) Operational definitions for the kinds of behavior**

Explanation: Researchers must develop clear operational definitions for behaviors they plan to observe to ensure consistency and accuracy.

Q396. Why might observers need training before conducting observations?

A) To improve their funding proposals
B) **To ensure they are knowledgeable and skilled in observation techniques**
C) To increase the sample size
D) To minimize the time spent on observations

Answer: **B) To ensure they are knowledgeable and skilled in observation techniques**

Explanation: Training equips observers with the necessary skills and knowledge to conduct effective and accurate observations.

Q397. According to Williamson et al., what is the first stage for an observer?

A) Gaining access to the setting
B) **Choosing the research site**
C) Formulating the analysis
D) Jotting down notes

Answer: **B) Choosing the research site**

Explanation: The first stage in the observation process involves selecting an appropriate research site for the study.

Q398. What is essential for the accuracy of observations?

A) Having a single observer
B) **Proper conditions such as distance and lighting**
C) Conducting observations quickly
D) Using only manual recording methods

Answer: **B) Proper conditions such as distance and lighting**

Explanation: Accurate observations depend on favorable conditions that allow the observer to collect reliable data.

Q399. What type of recording methods may observers use to document their observations?

A) Only written notes
B) **Tape recorders and electronic gadgets**
C) Only video recordings
D) Only personal diaries

Answer: **B) Tape recorders and electronic gadgets**

Explanation: Observers can utilize various recording methods, including tape recorders and electronic devices, to accurately document their observations.

Q400. Why is it important to note expressions and behaviors during observation?

A) To justify the research budget
B) **They provide valuable insights into the subjects' feelings and attitudes**
C) To enhance personal biases
D) To complete the study quickly

Answer: **B) They provide valuable insights into the subjects' feelings and attitudes**

Explanation: Observing expressions and behaviors can reveal underlying emotions and attitudes that may not be explicitly stated, enriching the data collected.

Q401. What is the primary characteristic of **systematic observation**?
A. It follows a structured and logical approach for data collection.
B. It is unplanned and random.
C. It is only conducted in laboratory settings.
D. It is subjective and lacks consistency.
Answer: A. It follows a structured and logical approach for data collection.
Explanation: Systematic observation is defined by its use of stated procedures and rules for observation, making the data collection replicable.

Q402. Which of the following describes **unsystematic observation**?
A. It involves strict adherence to a methodological framework.
B. It does not follow any predefined rules or logic.
C. It is characterized by high levels of control.
D. It is only applicable in structured environments.
Answer: B. It does not follow any predefined rules or logic.
Explanation: Unsystematic observation lacks a structured approach, making replication of the data difficult.

Q403. What is a key feature of **structured observation**?
A. It allows for random sampling of behaviors.
B. It employs a formal procedure with clearly defined units to be observed.
C. It is completely unplanned and spontaneous.
D. It is only conducted in natural settings.
Answer: B. It employs a formal procedure with clearly defined units to be observed.
Explanation: Structured observation involves careful planning and organization, where specific categories of observation are developed.

Q404. How does **unstructured observation** differ from structured observation?
A. It requires more control over the observation environment.
B. It is planned and involves strict procedures.
C. It relies on natural situations without a structured program.
D. It is only applicable in laboratory settings.
Answer: C. It relies on natural situations without a structured program.
Explanation: Unstructured observation allows the observer to adapt to the natural context, without predefined categories or strict planning.

Q405. In which type of observation is the identity and purpose of the researcher known to the participants?
A. Covert observation
B. Overt observation
C. Hidden observation
D. Natural observation
Answer: B. Overt observation
Explanation: Overt observation means that both the identity of the researcher and the purpose of the study are disclosed to the participants.

Q406. What type of observation is characterized by the subjects being unaware that they are being observed?
A. Structured observation
B. Covert observation
C. Direct observation
D. Unstructured observation
Answer: B. Covert observation
Explanation: In covert observation, the subjects are not aware they are being observed, which can lead to more natural behavior.

Q407. What is an example of **indirect observation**?
A. A researcher asking participants about their feelings.
B. A police investigation examining physical traces left at a crime scene.
C. A teacher observing students during a class.
D. A researcher conducting interviews with subjects.
Answer: B. A police investigation examining physical traces left at a crime scene.
Explanation: Indirect observation involves studying physical evidence or traces when direct participation is not possible, such as when a subject is deceased or refuses to participate.

Q408. Which observation type requires the researcher to have control over the variables and conditions?
A. Natural observation
B. Laboratory observation
C. Covert observation
D. Unstructured observation
Answer: B. Laboratory observation
Explanation: Laboratory observation is conducted in a controlled environment, allowing the researcher to manipulate conditions and variables.

UNIT 11

QUESTIONNAIRE METHOD

Q409. According to McKornam (1996), how many types of questionnaires are there?
A. Two
B. Three
C. Four
D. Five
Answer: B. Three
Explanation: McKornam categorized questionnaires into three types: mailed questionnaires, group-administered questionnaires, and personal contact questionnaires.

Q410. What is a **mailed questionnaire** also referred to as by Williams (1997)?
A. Group-administered questionnaire
B. Personal contact questionnaire
C. Self-completion questionnaire
D. Open-ended questionnaire
Answer: C. Self-completion questionnaire
Explanation: Williams refers to mailed questionnaires as self-completion questionnaires, where respondents fill out a predetermined set of questions.

Q411. What is a primary advantage of **mailed questionnaires**?
A. They have a high response rate.
B. They cover a wider geographical area.
C. They require immediate responses.
D. They allow for personal interaction.
Answer: B. They cover a wider geographical area.

Explanation: Mailed questionnaires can reach respondents across a broad geographical area, making them cost-effective.

Q412. What is a significant disadvantage of **mailed questionnaires**?
A. High cost of distribution.
B. Potential for incomplete answers.
C. Difficulties in personal interaction.
D. High need for immediate feedback.
Answer: B. Potential for incomplete answers.
Explanation: Mailed questionnaires may lead to incomplete answers, which pose challenges during data analysis.

Q413. In a **group-administered questionnaire**, how do respondents complete the questionnaire?
A. Individually, at their convenience.
B. In the presence of the researcher.
C. At a designated location with others.
D. Through online submissions.
Answer: C. At a designated location with others.
Explanation: In group-administered questionnaires, respondents gather at one place to complete the questionnaire, often used by teachers.

Q414. What characterizes a **personal contact questionnaire**?
A. It is filled out independently by respondents.
B. It involves interaction between the researcher and respondents.
C. It is mailed to participants with pre-paid envelopes.
D. It is conducted exclusively in laboratory settings.
Answer: B. It involves interaction between the researcher and respondents.
Explanation: Personal contact questionnaires allow the researcher to clarify doubts and interact with respondents during the data collection process.

Q415. What are the two main categories of survey questions?
A. Qualitative and quantitative
B. Open-ended and close-ended
C. Structured and unstructured
D. Direct and indirect
Answer: B. Open-ended and close-ended
Explanation: Survey questions can be grouped into open-ended and close-ended categories, each with distinct advantages and disadvantages.

Q416. Which of the following is an advantage of **open-ended questions**?
A. They provide specific answers.
B. They limit respondents' responses.
C. They allow for unanticipated answers.
D. They are easy to code.
Answer: C. They allow for unanticipated answers.
Explanation: Open-ended questions provide respondents with the freedom to express their views, leading to unanticipated and diverse responses.

Q417. What is a disadvantage of **open-ended questions**?
A. They lead to standardized responses.
B. Responses can be vague or irrelevant.
C. They are quick to answer.
D. They encourage creativity in responses.
Answer: B. Responses can be vague or irrelevant.
Explanation: Open-ended questions can yield vague or off-topic answers, complicating the analysis process.

Q418. What are **close-ended questions** best suited for?
A. Small-scale surveys
B. Large-scale surveys
C. Qualitative research
D. Individual interviews
Answer: B. Large-scale surveys
Explanation: Close-ended questions are particularly effective for large-scale surveys as they are easier and quicker for respondents to answer.

Q419. One major advantage of **close-ended questions** is that they are:
A. Time-consuming to interpret
B. Difficult for respondents to answer
C. Easy to code and tabulate
D. Always provide accurate responses
Answer: C. Easy to code and tabulate
Explanation: Close-ended questions facilitate easy coding and tabulation, making data analysis straightforward.

Q420. A challenge faced by researchers when designing **close-ended questions** is:
A. Having too few choices
B. Too many options can confuse respondents
C. Both A and B
D. Responses are always accurate
Answer: C. Both A and B
Explanation: Researchers must balance the number of response options; too few may not yield desired results, while too many can confuse respondents.

Q421. According to Paul Burton, **close-ended questions** can be classified into:
A. Open and closed questions
B. Qualitative and quantitative questions
C. Single choice and multiple-choice questions
D. Direct and indirect questions
Answer: C. Single choice and multiple-choice questions
Explanation: Paul Burton classifies close-ended questions into single choice or multiple-choice categories, defining how respondents can select answers.

Q422. Which of the following is **not** an advantage of close-ended questions?
A. Cost-effective
B. Respondents can provide detailed opinions
C. Easy for respondents to answer
D. Answers can be compared
Answer: B. Respondents can provide detailed opinions
Explanation: Close-ended questions limit the depth of responses, making them less suitable for detailed opinions compared to open-ended questions.

Q423. A potential disadvantage of **close-ended questions** is:
A. They allow for spontaneous answers.
B. They can frustrate respondents who do not see their desired options.
C. They are too complex for analysis.
D. They are too time-consuming to administer.
Answer: B. They can frustrate respondents who do not see their desired options.
Explanation: Respondents may become frustrated if their preferences are not adequately represented in the available choices.

Q424. Combining both **open-ended and close-ended questions** in a questionnaire can:
A. Increase confusion among respondents
B. Reduce the disadvantages of both types of questions
C. Only focus on quantitative data
D. Limit the scope of the study
Answer: B. Reduce the disadvantages of both types of questions
Explanation: A judicious mix of both question types can provide comprehensive data while mitigating the weaknesses of each approach.

Q425. For obtaining **quantitative data**, which type of question is most suitable?
A. Open-ended questions
B. Close-ended questions
C. Qualitative questions
D. Subjective questions
Answer: B. Close-ended questions
Explanation: Close-ended questions are most effective for gathering quantitative data, as they provide structured response options.

Q426. Which type of question is required for collecting **qualitative data**?
A. Closed-ended questions
B. Open-ended questions
C. True/false questions
D. Multiple-choice questions
Answer: B. Open-ended questions
Explanation: Open-ended questions allow respondents to express their thoughts and opinions freely, making them ideal for qualitative data collection.

Q427. What is the main purpose of using **scaling techniques** in questionnaires?
A. To make questions easier to read
B. To simplify data analysis
C. To increase response time
D. To confuse respondents
Answer: B. To simplify data analysis
Explanation: Scaling techniques help in organizing responses, making it easier to analyze the data collected.

Q428. A **rating scale** is best described as:
A. A qualitative measure of responses
B. A method requiring the observer to categorize rated objects with assigned numerals
C. A complex measuring instrument
D. An outdated method of measurement
Answer: B. A method requiring the observer to categorize rated objects with assigned numerals
Explanation: A rating scale allows respondents to assign items to specific categories or levels, often using numbers for clarity.

Q429. One advantage of **rating scales** is that they:
A. Require extensive training to administer
B. Are time-consuming to analyze
C. Are less expensive and quicker to use
D. Guarantee high validity
Answer: C. Are less expensive and quicker to use
Explanation: Rating scales are efficient for both respondents and researchers, making them a cost-effective option for data collection.

Q430. What is a **rank order scale** primarily used for?
A. Measuring numerical data
B. Ranking a list of items in order of preference
C. Gathering detailed qualitative responses
D. Evaluating factual knowledge
Answer: B. Ranking a list of items in order of preference
Explanation: A rank order scale allows respondents to prioritize items based on their preferences, streamlining data collection.

Q431. Which of the following should be **avoided** when constructing a questionnaire?
A. Clear and concise language
B. Use of jargons and slang
C. Single-focus questions
D. Straightforward instructions
Answer: B. Use of jargons and slang
Explanation: Jargons and slang can confuse respondents and lead to misinterpretation, undermining the clarity of the questionnaire.

Q432. According to Neuman (1997), **double-barreled questions** should be:
A. Used to gather multiple data points
B. Encouraged for detailed analysis
C. Avoided as they can confuse respondents
D. Reworded for clarity
Answer: C. Avoided as they can confuse respondents
Explanation: Double-barreled questions ask about two different issues at once, which can lead to ambiguous responses.

Q433. Busha and Harter (1980) emphasize the importance of:
A. Analyzing complex research problems
B. Avoiding brevity in responses
C. Requesting only information that can be easily provided
D. Encouraging extensive elaboration from

respondents
Answer: C. Requesting only information that can be easily provided
Explanation: It's essential to ensure that questions are manageable for respondents to encourage complete and accurate data collection.

Q434. Which of the following is a precaution when preparing a questionnaire?
A. Asking vague questions
B. Including unneeded questions
C. Ensuring clarity in question phrasing
D. Using complex language
Answer: C. Ensuring clarity in question phrasing
Explanation: Clarity is crucial for obtaining valid data and ensuring that respondents understand the questions being asked.

Q435. The **willingness of respondents** to participate in a survey is:
A. Irrelevant to data quality
B. Critical for collecting valuable information
C. Only important in qualitative research
D. A secondary concern for researchers
Answer: B. Critical for collecting valuable information
Explanation: Willingness directly impacts the quality of responses, making it essential for effective data collection.

Q436. Which of the following best describes **ambiguous questions** in a questionnaire?
A. Questions that have a single, clear interpretation
B. Questions that may lead to multiple interpretations
C. Questions that require a simple yes or no answer
D. Questions that are straightforward and concise
Answer: B. Questions that may lead to multiple interpretations
Explanation: Ambiguous questions can confuse respondents, leading to unclear or unreliable data.

Q437. Why is the **response rate** considered crucial in survey research?
A. It determines the complexity of the survey.
B. It affects the reliability of the research findings.
C. It increases the length of the questionnaire.
D. It simplifies data analysis.
Answer: B. It affects the reliability of the research findings.
Explanation: A high response rate is essential for ensuring that the findings of a survey are representative and reliable.

Q438. Which of the following factors can **negatively impact** the response rate in surveys?
A. Short and simple questionnaires
B. Engaging with the target population
C. Use of highly technical language
D. Timely distribution of questionnaires
Answer: C. Use of highly technical language
Explanation: Technical language can discourage respondents from completing the questionnaire, leading to lower response rates.

Q439. One way to increase the response rate is to:
A. Avoid follow-up communications
B. Distribute lengthy questionnaires
C. Contact respondents frequently
D. Use complex question formats
Answer: C. Contact respondents frequently
Explanation: Regular communication can remind and encourage respondents to complete and return the questionnaire.

Q440. Distributing questionnaires during **vacations or weekends** is likely to yield:
A. Lower response rates
B. Higher response rates
C. No change in response rates
D. Inconsistent response rates
Answer: B. Higher response rates
Explanation: Respondents are generally more available and willing to participate during these times.

Q441. What should be included in a **reminder letter** sent two weeks after distributing the questionnaire?
A. A warning about incomplete responses
B. Another copy of the questionnaire
C. An apology for any inconvenience
D. A request for feedback on the questionnaire
Answer: B. Another copy of the questionnaire
Explanation: Including another copy helps ensure that the respondent can complete and return it if the original was misplaced.

Q442. Which of the following is an example of a factor that might lead respondents to refuse to answer a questionnaire?
A. The questionnaire being short and concise
B. The questionnaire being relevant to their interests
C. Ignorance of the topic under research
D. Frequent reminders from the researcher
Answer: C. Ignorance of the topic under research
Explanation: If respondents feel they lack knowledge about the subject, they may be reluctant to participate.

Q443. When aiming to improve response rates, researchers should prioritize:
A. Lengthy questionnaires with many questions
B. Technical jargon to convey professionalism
C. Clear and simple language in questionnaires
D. Minimal contact with respondents
Answer: C. Clear and simple language in questionnaires
Explanation: Clear language encourages participation and helps ensure respondents understand the questions.

Q444. Politeness and patience are emphasized for researchers when:
A. Asking complicated questions
B. Distributing and reminding respondents about the questionnaire
C. Analyzing survey results
D. Conducting interviews
Answer: B. Distributing and reminding respondents about the questionnaire
Explanation: A polite and patient approach fosters a positive relationship with respondents, which can lead to better response rates.

UNIT 12

INTERVIEW METHOD

Q445. According to Krishan Kumar (1992), interviewing is defined as:
A. A method of data analysis.
B. A process of personal interaction between a researcher and a respondent.
C. A survey technique that requires no interaction.
D. A method used only for qualitative research.
Answer: B. A process of personal interaction between a researcher and a respondent.
Explanation: Interviewing involves direct interaction between the researcher and the respondent to gather data.

Q446. In a **structured interview**, the interviewer:
A. Can change the sequence of questions.
B. Is required to follow a pre-drafted set of questions.
C. Can ask follow-up questions at any time.
D. Should avoid recording the answers.
Answer: B. Is required to follow a pre-drafted set of questions.
Explanation: Structured interviews involve asking a specific set of pre-determined questions without deviation.

Q447. What is the main difference between **interviewing** and an **interview schedule**?
A. Interviewing is a method, while an interview schedule is a tool for data collection.
B. Interviewing involves only closed-ended questions, while an interview schedule uses open-ended questions.
C. Interviewing can be conducted in person, while

an interview schedule cannot.
D. There is no difference; both terms mean the same.
Answer: A. Interviewing is a method, while an interview schedule is a tool for data collection.
Explanation: Interviewing is the process of collecting data, whereas the interview schedule is a structured tool used during this process.

Q448. One advantage of **structured interviews** is that they:
A. Generate uniform data.
B. Allow for personal viewpoints to be shared freely.
C. Require extensive interviewing skills.
D. Are less time-consuming than unstructured interviews.
Answer: A. Generate uniform data.
Explanation: Structured interviews produce consistent and comparable data across different respondents.

Q449. In an **unstructured interview**, the interviewer:
A. Follows a strict set of questions.
B. Has the autonomy to ask any questions that arise during the interview.
C. Must stick to the interview schedule without deviation.
D. Primarily uses closed-ended questions.
Answer: B. Has the autonomy to ask any questions that arise during the interview.
Explanation: Unstructured interviews allow for flexibility and spontaneity in questioning, which can lead to richer data.

Q450. According to O'Leary (2004), complexities in interviewing may arise due to:
A. The simplicity of the questions asked.
B. The characteristics of the target population and communication challenges.
C. The use of only open-ended questions.
D. The formal setting of the interview.
Answer: B. The characteristics of the target population and communication challenges.
Explanation: Understanding the complexities of human interaction and communication is essential in the interviewing process.

Q451. In unstructured interviews, the interviewer is expected to:
A. Stick to a fixed set of questions.
B. Rely on the interview guide for direction but allow free-flowing conversation.
C. Avoid asking any follow-up questions.
D. Only record responses without engaging the interviewee.
Answer: B. Rely on the interview guide for direction but allow free-flowing conversation.
Explanation: While unstructured interviews may start with a guide, they allow for more natural dialogue and exploration of topics.

Q452. What is the primary goal of an **unstructured interview**?
A. To gather statistical data.
B. To obtain a personal viewpoint from respondents on a given topic.
C. To limit respondents' answers to predetermined options.
D. To simplify the data collection process.
Answer: B. To obtain a personal viewpoint from respondents on a given topic.
Explanation: Unstructured interviews are designed to explore individual perspectives and insights in depth.

Q453. An **unstructured interview** is also known as:
A. Structured interview.
B. In-depth interview.
C. Focused interview.
D. Telephonic interview.
Answer: B. In-depth interview.
Explanation: Unstructured interviews are often referred to as in-depth interviews because they seek detailed information.

Q454. According to Kothari (2004), depth interviews are designed to:
A. Gather statistical data.
B. Discover underlying motives and desires.
C. Limit the responses of participants.
D. Focus solely on quantitative research.
Answer: B. Discover underlying motives and desires.
Explanation: Depth interviews aim to explore the deeper motivations and feelings of respondents.

Q455. A **focused interview** is primarily conducted to:
A. Collect random data from respondents.
B. Obtain in-depth information on a specific issue.
C. Conduct surveys in a structured manner.
D. Gather data without any specific topic.
Answer: B. Obtain in-depth information on a specific issue.
Explanation: Focused interviews aim to elicit detailed information on a particular topic from respondents.

Q456. In a **non-directive interview**, the interviewer:
A. Controls the discussion entirely.
B. Acts as a catalyst and prompts the respondents to share information.
C. Follows a strict set of questions without deviation.
D. Avoids any interaction with the respondents.
Answer: B. Acts as a catalyst and prompts the respondents to share information.
Explanation: The interviewer encourages the respondents to provide information while maintaining control over the general topic.

Q457. A **clinical interview** is often used in:
A. Market research.
B. Social care work and counseling.
C. Telephonic surveys.
D. Structured questionnaire studies.
Answer: B. Social care work and counseling.
Explanation: Clinical interviews are commonly used in settings such as social care and counseling to explore feelings and life experiences.

Q458. The main advantage of a **telephonic interview** is:
A. It allows for face-to-face interaction.
B. It requires extensive skills to conduct.
C. It enables quick data collection without travel.
D. It provides detailed written responses.
Answer: C. It enables quick data collection without travel.
Explanation: Telephonic interviews are efficient for gathering data quickly and economically without visiting respondents.

Q459. Computer Assisted Telephone Interviewing (CATI) is designed to:
A. Conduct interviews without any technological assistance.
B. Simplify data collection and analysis through software.
C. Limit the number of respondents in a study.
D. Ensure that all interviews are conducted in person.
Answer: B. Simplify data collection and analysis through software.
Explanation: CATI uses technology to enhance the efficiency and quality of data collection in surveys.

Q460. Before the actual interview process, it is advisable to:
A. Conduct interviews without preparation.
B. Pre-test the interview questions with a pilot group.
C. Finalize the questions without feedback.
D. Avoid any modifications to the interview schedule.
Answer: B. Pre-test the interview questions with a pilot group.
Explanation: Conducting a pilot study helps

researchers refine their questions and improve the overall quality of the interview.

Q461. The pilot test of the interview schedule is important because it allows researchers to:
A. Gather data from the actual respondents.
B. Obtain suggestions to improve the interview questions.
C. Limit the scope of the study.
D. Ensure that only closed-ended questions are asked.
Answer: B. Obtain suggestions to improve the interview questions.
Explanation: Feedback from the pilot group can help researchers modify the questions for better responses in the actual study.

Q462. In structured interviews, the method of recording responses is primarily done through:
A. Video recording.
B. Audio recording.
C. Note Taking method.
D. Verbatim transcription.
Answer: C. Note Taking method.
Explanation: The Note Taking method is commonly used in structured interviews, especially when closed-ended questions are asked.

Q463. When using the Note Taking method, if a respondent does not answer a question, the interviewer should write:
A. "Not applicable."
B. "Skipped."
C. "Not responded."
D. "No comment."
Answer: C. "Not responded."
Explanation: It is important to indicate that the respondent did not provide an answer by writing "not responded" or a similar note.

Q464. Comments made by the respondent during the interview should be recorded:
A. In a separate document only.
B. On a different sheet from the interview schedule.
C. In the margin area near the questions.
D. Verbally at the end of the interview.
Answer: C. In the margin area near the questions.
Explanation: Noting comments in the margin area helps contextualize responses during data analysis.

Q465. The explanations given by the interviewer should be recorded:
A. Only at the end of the interview.
B. Separately question-wise.
C. In a summary format after all responses.
D. Only if requested by the respondent.
Answer: B. Separately question-wise.
Explanation: Recording explanations separately for each question aids in clarity and facilitates easier analysis later.

Q466. Preparing verbatim transcripts after an interview is considered:
A. An easy task that requires little time.
B. A time-consuming and arduous task.
C. Optional and not necessary for research.
D. A simple summary of the interview content.
Answer: B. A time-consuming and arduous task.
Explanation: According to Helen Finch (1990), preparing transcripts is labor-intensive and can take a significant amount of time.

Q467. It may be beneficial for researchers to outsource the task of preparing transcripts to:
A. Other researchers in their field.
B. An outside professional agency.
C. Their interview participants.
D. Their colleagues in the same institution.
Answer: B. An outside professional agency.
Explanation: Outsourcing transcription can allow researchers to focus on other aspects of their work while ensuring quality in the transcription process.

UNIT 13

EXPERIMENTAL METHOD

Q468. Which of the following is NOT considered a part of an experiment?
A. Independent variable.
B. Control group.
C. Literature review.
D. Experimental group.
Answer: C. Literature review.
Explanation: A literature review is not a part of an experiment but a background study that informs research.

Q469. In experimental research, the variable that is manipulated is known as the:
A. Dependent variable.
B. Independent variable.
C. Subject variable.
D. Control variable.
Answer: B. Independent variable.
Explanation: The independent variable is the one that the researcher manipulates to observe its effect.

Q470. The subjects who receive the treatment in an experiment are referred to as the:
A. Control group.
B. Experimental group.
C. Random group.
D. Subject group.
Answer: B. Experimental group.
Explanation: The experimental group consists of subjects who are randomly assigned to receive the treatment.

Q471. What is the purpose of a control group in an experiment?
A. To receive the treatment.
B. To provide a basis for comparison.
C. To manipulate the independent variable.
D. To increase the sample size.
Answer: B. To provide a basis for comparison.
Explanation: The control group does not receive the treatment, allowing researchers to compare results with the experimental group.

Q472. Random assignment is important in experiments because it:
A. Ensures all subjects receive the treatment.
B. Helps control for confounding variables.
C. Eliminates the need for a control group.
D. Guarantees higher response rates.
Answer: B. Helps control for confounding variables.
Explanation: Random assignment minimizes the influence of external factors that could affect the outcome of the experiment.

Q473. A pretest is defined as:
A. Measurement of the dependent variable after treatment.
B. Measurement of the dependent variable before treatment.
C. Measurement of the independent variable during treatment.
D. Random assignment of subjects to groups.
Answer: B. Measurement of the dependent variable before treatment.
Explanation: A pretest measures the dependent variable prior to the introduction of the treatment.

Q474. The measurement of the dependent variable after the introduction of treatment is called:
A. Pretest.
B. Control test.
C. Posttest.
D. Random test.
Answer: C. Posttest.
Explanation: A posttest measures the dependent variable after the treatment has been applied.

Q475. Which of the following statements best describes the cause-and-effect relationship in an experiment?
A. It shows the influence of random assignment on the outcome.
B. It illustrates the relationship between the independent and dependent variables.
C. It focuses on the comparison between the

experimental and control groups.
D. It emphasizes the importance of pretests and posttests.
Answer: B. It illustrates the relationship between the independent and dependent variables.
Explanation: The cause-and-effect relationship highlights how manipulating the independent variable affects the dependent variable.

Q476. An experiment is distinguished from mere observation because it involves:
A. Only natural settings.
B. Deliberate human intervention to produce change.
C. Passive data collection.
D. Non-manipulative research methods.
Answer: B. Deliberate human intervention to produce change.
Explanation: Experiments involve actively manipulating variables to observe changes, unlike simple observation.

Q477. Which of the following is NOT a purpose of laboratory experiments?
A. To discover causal relations under uncontaminated conditions.
B. To test predictions derived from theory.
C. To conduct research in a natural setting.
D. To refine theories.
Answer: C. To conduct research in a natural setting.
Explanation: Laboratory experiments are conducted in controlled settings, not natural environments.

Q478. What is one merit of laboratory experiments?
A. High degree of flexibility.
B. Complete control over extraneous factors.
C. Results can be easily generalized to real-life situations.
D. Stronger effects of independent variables.
Answer: B. Complete control over extraneous factors.
Explanation: Laboratory experiments allow researchers to control external variables to isolate the effects of the independent variable.

Q479. A significant demerit of laboratory experiments is:
A. The high cost of conducting experiments.
B. The strong effects of independent variables.
C. The artificial setting leading to weak effects of manipulation.
D. The flexibility in experimental design.
Answer: C. The artificial setting leading to weak effects of manipulation.
Explanation: The artificial nature of laboratory settings may weaken the perceived effects of the manipulated variables.

Q480. In contrast to laboratory experiments, field experiments are characterized by:
A. More control over variables.
B. Higher precision in measurements.
C. Conducting research in real-life situations.
D. Less reliance on extraneous factors.
Answer: C. Conducting research in real-life situations.
Explanation: Field experiments take place in natural settings, reflecting real-world conditions.

Q481. Which of the following is a merit of field experiments?
A. Greater precision in measurement.
B. Stronger effects of independent variables due to realism.
C. Complete control over extraneous variables.
D. High level of structure and standardization.
Answer: B. Stronger effects of independent variables due to realism.
Explanation: The real-life context of field experiments often leads to stronger impacts from the independent variables.

Q482. One of the major demerits of field experiments is:

A. The ease of manipulating independent variables.
B. The practical difficulties in manipulation and randomization.
C. The lack of social relevance.
D. The structured environment of the study.
Answer: B. The practical difficulties in manipulation and randomization.
Explanation: Field experiments often face challenges in controlling variables and ensuring random assignment due to their real-world nature.

Q483. For a field experiment to be more successful, it is recommended to conduct:
A. A laboratory study.
B. A pre-test of the dependent variable.
C. A field study to gain knowledge of the setting.
D. An extensive literature review.
Answer: C. A field study to gain knowledge of the setting.
Explanation: Conducting a field study beforehand helps the researcher understand the environment better, improving the chances of success for the field experiment.

Q484. The Before-After or Pre-test-Post-test experimental design is often referred to as:
A. Quasi-experimental design.
B. Classical experimental design.
C. After-only experimental design.
D. Mixed design.
Answer: B. Classical experimental design.
Explanation: This design is known for its reliability and systematic approach in experimental research.

Q485. In the classical experimental design, after the pretest, the treatment is administered to:
A. Both control and experimental groups.
B. Only the control group.
C. Only the experimental group.
D. Neither group.
Answer: C. Only the experimental group.
Explanation: The treatment is specifically applied to the experimental group, while the control group does not receive the treatment.

Q486. One limitation of the Before-After experimental design is:
A. It requires complex statistical analysis.
B. It does not ensure freedom from external factors.
C. It is difficult to implement in real-life settings.
D. It cannot be replicated.
Answer: B. It does not ensure freedom from external factors.
Explanation: This design may still be influenced by external factors that can affect the outcome.

Q487. In the After-only or Pre-test only experimental design, how are the subjects selected?
A. They are assigned randomly to groups.
B. They are selected based on convenience sampling.
C. They are chosen to be similar in all conditions.
D. They are selected through random stratification.
Answer: C. They are chosen to be similar in all conditions.
Explanation: This design requires that the experimental and control groups are similar to ensure valid comparisons.

Q488. A quasi-experimental design is characterized by:
A. Random assignment of subjects to groups.
B. Manipulation of the independent variable without random assignment.
C. Complete control over extraneous variables.
D. Lack of manipulation of any variables.
Answer: B. Manipulation of the independent variable without random assignment.
Explanation: Quasi-experimental designs allow for manipulation of variables but do not use random assignment.

Q489. The term 'Ex Post Facto' refers to research situations where:
A. The experimenter manipulates the independent variable.
B. The experimenter cannot control the stimulus or

variables.
C. Random assignment is used.
D. Changes are achieved before observation.
Answer: B. The experimenter cannot control the stimulus or variables.
Explanation: 'Ex Post Facto' means the analysis is done after an effect has occurred, without manipulation by the researcher.

Q490. Special design (Mixed Design) requires the use of:
A. Single-factor analysis.
B. Only qualitative research methods.
C. Computer programs and statistical consultants.
D. Randomized control trials.
Answer: C. Computer programs and statistical consultants.
Explanation: Mixed designs, which involve multifactor analysis, often necessitate sophisticated statistical tools.

Q491. A mixed design is particularly useful when the researcher:
A. Seeks to limit the number of variables involved.
B. Wants to generalize results to real-life situations with multiple treatment levels.
C. Aims for simple, straightforward experimental conditions.
D. Is dealing with only two levels of treatment.
Answer: B. Wants to generalize results to real-life situations with multiple treatment levels.
Explanation: Mixed designs allow for exploration of complex real-world scenarios where multiple factors influence outcomes.

UNIT 14

CASE STUDY

Q492. According to Charles H. Cooley, case studies:
A. Limit the understanding of social phenomena.
B. Deepen perception and provide clear insights into life.
C. Are irrelevant in social research.
D. Are merely observational methods.
Answer: B. Deepen perception and provide clear insights into life.
Explanation: Cooley emphasizes that case studies enhance understanding and provide clarity about life.

Q493. Pauline Young describes case study as a method for exploring and analyzing:
A. Only individual behaviors.
B. The life of a social unit, such as a person or community.
C. Historical data exclusively.
D. Statistical trends in a population.
Answer: B. The life of a social unit, such as a person or community.
Explanation: Young highlights the comprehensive nature of case studies in examining social units.

Q494. Goode and Hatt define case study as a way of:
A. Randomly sampling social data.
B. Organizing social data to preserve the unity of the object studied.
C. Isolating variables for experimental analysis.
D. Analyzing quantitative data exclusively.
Answer: B. Organizing social data to preserve the unity of the object studied.
Explanation: Their definition focuses on maintaining the integrity of the social unit being analyzed.

Q495. According to F.L. Whitney, a case study involves:
A. Brief surveys of various subjects.
B. A complete analysis and report of an individual's status in specific phases of personality.
C. Only the quantitative analysis of groups.
D. Purely observational techniques without interaction.

Answer: B. A complete analysis and report of an individual's status in specific phases of personality.
Explanation: Whitney emphasizes the thorough nature of case studies regarding individual subjects.

Q496. Case studies are particularly valuable because they provide:
A. A single perspective on a social phenomenon.
B. Rich descriptions of events from multiple perspectives.
C. Only quantitative data for analysis.
D. Limited insights into historical contexts.
Answer: B. Rich descriptions of events from multiple perspectives.
Explanation: Case studies are known for their depth and multifaceted views of social situations.

Q497. In library and information science, the main purpose of case studies is:
A. To gather only statistical data.
B. Fact-finding related to individuals and institutions.
C. To focus solely on theoretical analysis.
D. To compare different libraries.
Answer: B. Fact-finding related to individuals and institutions.
Explanation: Case studies in this field aim to uncover practical insights for management and service planning.

Q498. Which of the following is NOT listed as a source of data for case studies?
A. Life histories.
B. Personal records.
C. Randomized surveys.
D. Interviews and observations.
Answer: C. Randomized surveys.
Explanation: Case studies utilize personal and qualitative sources rather than randomized survey methods.

Q499. Which skill is considered essential for a researcher conducting a case study?
A. Ability to make assumptions without evidence.
B. Asking good questions and interpreting answers effectively.
C. Rigid adherence to a predetermined methodology.
D. Ignoring contradictory evidence.
Answer: B. Asking good questions and interpreting answers effectively.
Explanation: Effective questioning and interpretation are critical for gaining insights from case studies.

Q500. A researcher should be:
A. Fixed in their perspective and resistant to change.
B. Adaptable and flexible in encountering new situations.
C. Uninterested in the theoretical background of the study.
D. Focused solely on their own biases.
Answer: B. Adaptable and flexible in encountering new situations.
Explanation: Adaptability allows researchers to view new situations as opportunities for deeper understanding.

UNIT 15

RESEARCH DESIGN

Q501. Research is characterized as:
A. Random and unstructured.
B. Systematic, skeptic, and ethical.
C. Solely dependent on technology.
D. An informal inquiry process.
Answer: B. Systematic, skeptic, and ethical.
Explanation: Robson emphasizes these three characteristics as essential to effective research.

Q502. The primary aim of pure research is to:
A. Create immediate applications for societal problems.

B. Develop new theories without practical application.
C. Improve upon existing knowledge.
D. Conduct experiments on untested theories.
Answer: C. Improve upon existing knowledge.
Explanation: Pure research aims to enhance the understanding of established concepts and knowledge.

Q503. The trend in research today is leaning towards:
A. Pure research exclusively.
B. Applied research.
C. Informal research methods.
D. Historical research methods.
Answer: B. Applied research.
Explanation: A contemporary focus on applied research for practical societal benefits.

Q504. Research design is important because it:
A. Allows for random and chaotic studies.
B. Ensures research is carried out in a planned way.
C. Eliminates the need for data collection.
D. Focuses solely on theoretical frameworks.
Answer: B. Ensures research is carried out in a planned way.
Explanation: Research design provides a structured approach to conducting research effectively.

Q505. Factors to consider when deciding on a research design include all EXCEPT:
A. Nature of investigation.
B. Number of subjects' emotional states.
C. Data collection methods.
D. Period of reference for the study.
Answer: B. Number of subjects' emotional states.
Explanation: Emotional states of subjects are not mentioned as a consideration in research design decisions.

Q506. Which of the following is NOT a type of investigation?
A. Exploratory.
B. Experimental.
C. Narrative.
D. Descriptive.
Answer: C. Narrative.
Explanation: The types of investigation listed do not include narrative research as defined in the text.

Q507. The method of research that focuses on observing subjects over time is known as:
A. Cross-sectional research.
B. Longitudinal research.
C. Retrospective research.
D. Experimental research.
Answer: B. Longitudinal research.
Explanation: Longitudinal research involves repeated observations of the same subjects over a period of time.

Q508. Which of the following is a data collection method?
A. Ethnography.
B. Case studies.
C. Personal narratives.
D. Psychological testing.
Answer: B. Case studies.
Explanation: Case studies are highlighted as a valid method for data collection in research.

Q509. Retrospective research design primarily focuses on:
A. Future predictions.
B. Analyzing past data and events.
C. Real-time data collection.
D. Ongoing experiments.
Answer: B. Analyzing past data and events.
Explanation: Retrospective design looks back at data that has already been collected.

Q510. The term "non-experimental" research refers to designs that:
A. Do not involve any form of measurement.

B. Lack manipulation of independent variables.
C. Are entirely subjective.
D. Focus solely on numerical data.
Answer: B. Lack manipulation of independent variables.
Explanation: Non-experimental designs do not involve altering any variables; they simply observe existing conditions.

UNIT 15

RESEARCH DESIGN

Q511. The nature of investigation in research can be classified into which of the following types?
A. Exploratory, descriptive, causal/experimental, semi-experimental, non-experimental, and field research.
B. Quantitative, qualitative, mixed methods, and theoretical.
C. Systematic, unsystematic, chaotic, and random.
D. Observational, longitudinal, retrospective, and prospective.
Answer: A. Exploratory, descriptive, causal/experimental, semi-experimental, non-experimental, and field research.
Explanation: These categories encompass the different approaches researchers can take based on the investigation's nature.

Q512. Exploration in research is characterized as:
A. A systematic and rigid approach.
B. An initial foray into the unknown with vague ideas.
C. A methodical and structured investigation.
D. Solely a quantitative research technique.
Answer: B. An initial foray into the unknown with vague ideas.
Explanation: Exploration is the starting point of research, where researchers seek to understand unknown territories.

Q513. Experimental research focuses on:
A. Observing human behavior without manipulation.
B. The effects of independent variables on dependent variables.
C. Gathering qualitative data through unstructured interviews.
D. Describing existing conditions without altering variables.
Answer: B. The effects of independent variables on dependent variables.
Explanation: Experimental research examines how changes in independent variables affect dependent variables under controlled conditions.

Q514. What differentiates semi-experimental studies from experimental studies?
A. The use of theoretical frameworks.
B. The random sampling in experimental studies compared to non-random sampling in semi-experimental studies.
C. The duration of the research process.
D. The number of researchers involved.
Answer: B. The random sampling in experimental studies compared to non-random sampling in semi-experimental studies.
Explanation: Semi-experimental studies use non-random sampling methods, while experimental studies use random sampling.

Q515. Non-experimental studies ascribe changes in dependent variables to:
A. Random sampling techniques.
B. Induced changes in independent variables.
C. Observed relationships without manipulation.
D. Controlled laboratory settings.
Answer: C. Observed relationships without manipulation.
Explanation: Non-experimental studies do not manipulate independent variables; instead, they observe and analyze existing conditions.

Q516. In the provided example, the independent variable when studying the effect of IT use in the classroom is:

A. Student performance.
B. The method of teaching.
C. Use of IT in the classroom.
D. Classroom size.
Answer: C. Use of IT in the classroom.
Explanation: The study identifies the use of IT as the variable being manipulated to observe its effect on student performance.

Q517. Field research is characterized by:
A. Conducting research in controlled laboratory environments.
B. Studying behavior in real-life situations without significant intervention.
C. Relying solely on quantitative data collection methods.
D. Using random sampling techniques exclusively.
Answer: B. Studying behavior in real-life situations without significant intervention.
Explanation: Field research aims to observe and collect data in natural settings without altering the environment.

Q518. According to Kaplan, field research involves:
A. Complete control over all observed variables.
B. Direct or indirect observation of behavior in its natural circumstances.
C. A theoretical approach without practical application.
D. Exclusive use of surveys for data collection.
Answer: B. Direct or indirect observation of behavior in its natural circumstances.
Explanation: Kaplan highlights the observational nature of field research in understanding behavior.

Q519. The primary difference between experimental research and field experiments is:
A. The number of researchers involved.
B. The focus on qualitative vs. quantitative data.
C. The setting in which the research is conducted (laboratory vs. natural settings).
D. The length of time the research takes.
Answer: C. The setting in which the research is conducted (laboratory vs. natural settings).
Explanation: Experimental research is conducted in controlled laboratory settings, while field experiments occur in natural environments.

Q520. Field experiments involve:
A. Strictly observational techniques without manipulation.
B. Studying the effects of varying independent variables on dependent variables in real-life settings.
C. Collecting only qualitative data from participants.
D. Conducting research solely in controlled environments.
Answer: B. Studying the effects of varying independent variables on dependent variables in real-life settings.
Explanation: Field experiments manipulate independent variables while observing their effects in natural conditions.

Q521: Based on the period of reference of study, which of the following research designs is NOT?
A. Retrospective
B. Prospective
C. Cross-sectional
D. Retrospective-Prospective

Correct Answer: C. Cross-sectional
Explanation: Three types of research designs based on the period of reference: retrospective, prospective, and retrospective-prospective. Cross-sectional is not mentioned as one of the designs.

Q522: Which of the following is an example of a retrospective study?
A. Libraries of the future: How will they exist?
B. Employment scenario among LIS Professionals in 1990s.
C. Effect of RFID technology on pilferage of books in college libraries.
D. Prospects of digital libraries in India.

Correct Answer: B. Employment scenario among LIS Professionals in 1990s.

Explanation: Retrospective studies focus on phenomena that have occurred in the past. The employment scenario among LIS Professionals in the 1990s is a historical event.

Q523: What characterizes prospective studies?
A. They study past phenomena.
B. They aim to predict future situations.
C. They require a control group.
D. They collect data through retrospective recall.

Correct Answer: B. They aim to predict future situations.
Explanation: Prospective studies are concerned with predicting future events or situations, contrasting with retrospective studies that analyze past occurrences.

Q524: In the context of retrospective-prospective studies, what distinguishes them from other study types?
A. They have a control group.
B. They only observe independent variables.
C. They analyze past events and predict their future implications.
D. They only use qualitative data.

Correct Answer: C. They analyze past events and predict their future implications.
Explanation: Retrospective-prospective studies consider past phenomena and use that information to make predictions about future outcomes.

Q525: What is an essential component of research design?
A. Sampling method
B. Literature review
C. Hypothesis testing
D. Statistical software

Correct Answer: A. Sampling method
Explanation: The importance of clearly stating the sampling method used in research design, including whether it involves probability or non-probability sampling.

Q526: Which type of validity refers to how well a test measures what it is supposed to measure?
A. Face Validity
B. Content Validity
C. Construct Validity
D. Predictive Validity

Correct Answer: C. Construct Validity
Explanation: Construct validity assesses whether a test adequately measures the theoretical construct it aims to evaluate.

Q527: What method is used to ensure reliability through repeated measures?
A. Split-half technique
B. Test-retest method
C. Parallel test method
D. Observational method

Correct Answer: B. Test-retest method
Explanation: The test-retest method involves administering the same instrument to the same subjects at different times to check for consistency in results.

Q528: When conducting research, what does the term "dependent variable" refer to?
A. The variable manipulated by the researcher
B. The variable that is measured or observed
C. The variable that is controlled during the study
D. The variable that remains constant

Correct Answer: B. The variable that is measured or observed
Explanation: The dependent variable is the outcome or effect that is measured in a study, while the independent variable is the one manipulated to observe its effect on the dependent variable.

Q529: In the context of data collection, what is the significance of specifying when and where the data will be collected?
A. It ensures compliance with ethical guidelines.
B. It helps in improving data validity.
C. It assists in planning the budget for the study.
D. It clarifies the research design and context for the study.

Correct Answer: D. It clarifies the research design and context for the study.
Explanation: Specifying when and where data will be collected provides clarity about the study's context and operationalizes the research design effectively.

UNIT 16

RESEARCH PLAN

Q530: What is one of the primary functions of a research plan?
A. To define the research hypothesis
B. To give directions on what needs to be done, when and how
C. To limit the number of participants
D. To conduct statistical analysis

Correct Answer: B. To give directions on what needs to be done, when and how
Explanation: A research plan provides a roadmap for the research process, detailing what tasks need to be accomplished and in what order.

Q531: Which of the following is NOT a function of a research plan?
A. Evaluate your progress during research
B. Limit the scope of the topic
C. Prove the feasibility of the study
D. Provide a route from stating the topic to finalizing the results

Correct Answer: C. Prove the feasibility of the study
Explanation: The functions of a research plan include guiding research, evaluating progress, and defining scope, but proving feasibility is not explicitly mentioned.

Q532: What distinguishes quantitative proposals from qualitative proposals?
A. Quantitative proposals focus on exploratory research.
B. Quantitative proposals include hypotheses and operationalization of concepts.
C. Qualitative proposals are strictly experimental.
D. Qualitative proposals always have a defined sample size.

Correct Answer: B. Quantitative proposals include hypotheses and operationalization of concepts.
Explanation: Quantitative research typically involves hypotheses and operational definitions, while qualitative research often does not.

Q533: Which section of a research plan provides background information on the topic?
A. Title
B. Introduction
C. Scope
D. Problem Statement

Correct Answer: B. Introduction
Explanation: The introduction section offers background information, and a thorough review of existing literature related to the research topic.

Q534: How is the problem statement related to the introduction in a research plan?
A. The problem statement is a summary of the introduction.
B. The problem statement is less general than the introduction.
C. The introduction should only focus on the problem.
D. The problem statement should be longer than the introduction.

Correct Answer: B. The problem statement is less general than the introduction.
Explanation: The introduction provides general background information, while the problem statement focuses specifically on the research problem.

Q535: Why is it important to clarify the scope of a research topic?
A. To increase the number of variables considered
B. To indicate the extent of investigation and geographical area
C. To ensure the topic is broad enough for exploration
D. To limit the number of references used

Correct Answer: B. To indicate the extent of investigation and geographical area
Explanation: Clarifying the scope helps define the boundaries of the research, including subject content and geographical considerations.

Q536: What is the primary purpose of a hypothesis in research?
A. To provide a detailed literature review
B. To serve as a line of action for finding answers to the research problem
C. To summarize the research findings
D. To establish the final conclusions of the study

Correct Answer: B. To serve as a line of action for finding answers to the research problem
Explanation: Hypotheses guide researchers in their inquiry by suggesting potential relationships between variables.

Q537: What distinguishes a null hypothesis from an alternative hypothesis?
A. The null hypothesis is always true.
B. The null hypothesis states that there is no effect or relationship, while the alternative hypothesis suggests there is.
C. The null hypothesis is broader in scope than the alternative hypothesis.
D. The null hypothesis is based solely on qualitative research.

Correct Answer: B. The null hypothesis states that there is no effect or relationship, while the alternative hypothesis suggests there is.
Explanation: The null hypothesis typically represents a negative statement about expected relationships, while the alternative hypothesis posits that a relationship exists.

Q538: Why is a literature review important in the research process?
A. It replaces the need for data collection.
B. It helps the researcher understand existing work in the field and identify areas for further investigation.
C. It eliminates the need for a hypothesis.
D. It summarizes all research findings on the topic.

Correct Answer: B. It helps the researcher understand existing work in the field and identify areas for further investigation.
Explanation: A literature review provides context and background, helping researchers identify gaps and ripe areas for research.

Q539: What does the research design encompass in a research plan?
A. Only the data analysis methods
B. The entire operational plan from hypothesis formulation to data analysis
C. The theoretical framework of the study
D. The financial aspects of the research project

Correct Answer: B. The entire operational plan from hypothesis formulation to data analysis
Explanation: Research design outlines the methods of investigation, data collection, and analysis processes.

Q540: What is tentative chapterization in a research plan?

A. A detailed budget for the research project
B. An outline of the physical structure of the research report, indicating chapter titles
C. A list of references to be used in the research
D. A summary of research findings

Correct Answer: B. An outline of the physical structure of the research report, indicating chapter titles
Explanation: Tentative chapterization presents the planned chapters in a research report, providing a structure for the thesis.

Q541: What type of research design is best suited for exploratory investigations?
A. Experimental design
B. Descriptive design
C. Descriptive or exploratory design
D. Qualitative design only

Correct Answer: C. Descriptive or exploratory design
Explanation: Exploratory investigations often begin with descriptive or exploratory designs, allowing researchers to explore their topic more freely.

Q542: What are some common limitations in research studies?
A. Only methodological limitations
B. Limitations related to contents, geographical area, and time period of study
C. Limitations that do not affect the research quality
D. Limitations that are universally applicable to all research

Correct Answer: B. Limitations related to contents, geographical area, and time period of study
Explanation: Limitations can arise from various aspects, including the subject matter, geographical focus, and duration of the research.

Q543: Why is it important for researchers to admit limitations in their studies?
A. To make the study appear more complex
B. To provide transparency and context for evaluating the research
C. To deflect criticism from reviewers
D. To justify the time taken on the research

Correct Answer: B. To provide transparency and context for evaluating the research
Explanation: Acknowledging limitations helps evaluators understand the scope and constraints of the research.

Q544: What does a work plan in a research plan typically include?
A. Details of the funding agencies
B. A timeline for starting research, reviewing literature, and preparing instruments
C. A summary of the research findings
D. A detailed literature review

Correct Answer: B. A timeline for starting research, reviewing literature, and preparing instruments
Explanation: A work plan outlines the specific milestones and timelines for various stages of the research.

Q545: Which of the following agencies in India provides financial support for research?
A. Ministry of Education
B. University Grants Commission
C. Ministry of Finance
D. National Bureau of Statistics

Correct Answer: B. University Grants Commission
Explanation: The University Grants Commission is one of several agencies that provide funding for research in India.

Q546: What is the primary concern of ethics in research?
A. Obtaining the maximum funding possible
B. Ensuring the research is conducted in an

acceptable and responsible manner
C. Completing the research quickly
D. Following the same methods as previous studies

Correct Answer: B. Ensuring the research is conducted in an acceptable and responsible manner
Explanation: Ethics in research focuses on conducting work in a way that is socially acceptable and morally sound.

Q547: How are ethics and morals related in the context of research?
A. Ethics is less important than morals in research.
B. Ethics is solely about following rules, while morals are about personal beliefs.
C. Ethics concerns what one ought to do, while morals reflect personal beliefs about right and wrong.
D. Ethics and morals have no connection in research.

Correct Answer: C. Ethics concerns what one ought to do, while morals reflect personal beliefs about right and wrong.
Explanation: Ethics provides guidelines for acceptable behavior in research, while morals are subjective and personal.

UNIT 17

STATISTICAL INFERENCE

Q548: What is a hypothesis in research?
A. A definitive conclusion based on data
B. A tentative statement about a characteristic of a population
C. An established law of nature
D. An irrelevant opinion

Correct Answer: B. A tentative statement about a characteristic of a population
Explanation: A hypothesis proposes a specific claim about a population characteristic that can be tested.

Q549: What are the four important components of hypothesis testing?
A. Population, Sample, Data, Results
B. Null hypothesis, Alternative hypothesis, Test statistic, Interpretation of results
C. Claim, Evidence, Analysis, Conclusion
D. Theory, Observation, Experimentation, Conclusion

Correct Answer: B. Null hypothesis, Alternative hypothesis, Test statistic, Interpretation of results
Explanation: These components are essential for conducting hypothesis testing.

Q550: What is the null hypothesis denoted by?
A. H1
B. H0
C. HA
D. HZ

Correct Answer: B. H0
Explanation: The null hypothesis is commonly denoted by H0.

Q551: In hypothesis testing, what does the alternative hypothesis represent?
A. The statement we accept as true
B. The statement that is tested against the null hypothesis
C. The final conclusion of the research
D. The most probable outcome of the study

Correct Answer: B. The statement that is tested against the null hypothesis
Explanation: The alternative hypothesis (denoted HA) is considered if the null hypothesis is rejected.

Q552: What does a test statistic do in hypothesis testing?
A. It summarizes the research findings
B. It tests the difference between sample mean and population mean

C. It indicates the quality of the research design
D. It provides a funding source for research

Correct Answer: B. It tests the difference between sample mean and population mean
Explanation: The test statistic helps determine if observed differences are significant or due to sampling fluctuations.

Q553: What happens if the absolute value of the test statistic exceeds the critical value?
A. Accept the null hypothesis
B. Reject the null hypothesis
C. Collect more data
D. Conduct a different test

Correct Answer: B. Reject the null hypothesis
Explanation: If the test statistic exceeds the critical value, it indicates a significant difference, leading to the rejection of the null hypothesis.

Q554: What statistical test is used for large samples?
A. Chi-square test
B. Z-test
C. T-test
D. F-test

Correct Answer: B. Z-test
Explanation: The z-test is appropriate for hypothesis testing when the sample size is large.

Q555: What is the test statistic for the t-test given by?
A. nx\frac{n}{x}xn
B. xs\frac{x}{s}sx
C. sn\frac{s}{n}ns
D. xn\frac{x}{\sqrt{n}}nx

Correct Answer: C. sn\frac{s}{n}ns
Explanation: The t-test statistic is calculated using the sample mean and standard deviation.

Q556: How is the critical value of t determined?
A. It is fixed regardless of sample size
B. It depends on the degree of freedom
C. It is the same as the critical value for the z-test
D. It is irrelevant to hypothesis testing

Correct Answer: B. It depends on the degree of freedom
Explanation: The critical value for the t-test varies based on the sample size, which affects the degrees of freedom.

Q557: What is a Type I error in hypothesis testing?
A. Accepting the null hypothesis when it is false
B. Rejecting the null hypothesis when it is true
C. Failing to collect enough data
D. Making an error in data entry

Correct Answer: B. Rejecting the null hypothesis when it is true
Explanation: A Type I error occurs when the null hypothesis is actually true, but the test results lead to its rejection.

Q558: What is a Type II error?
A. Rejecting the null hypothesis when it is true
B. Accepting the null hypothesis when it is false
C. Ignoring the results of a study
D. Misinterpreting the confidence level

Correct Answer: B. Accepting the null hypothesis when it is false
Explanation: A Type II error happens when the null hypothesis is not rejected despite being false.

Q559: What does a confidence level of 95 percent imply?
A. 95 percent chance of a Type I error
B. 5 percent chance of making a Type II error
C. 95 percent of samples will have parameters in the acceptance region
D. All samples will be accepted

Correct Answer: C. 95 percent of samples will have parameters in the acceptance region

Explanation: A 95 percent confidence level indicates that in 95 out of 100 samples, the parameter remains in the acceptance region.

Q560: In hypothesis testing, what is the significance level denoted by?
A. α (alpha)
B. β (beta)
C. δ (delta)
D. θ (theta)

Correct Answer: A. α (alpha)
Explanation: The significance level (Type I error rate) is denoted by alpha (α).

Q561: What statistical tests are applied based on sample size?
A. Chi-square for all sizes
B. Z-test for large samples; T-test for small samples
C. Only T-test for both sizes
D. Z-test for small samples; Chi-square for large samples

Correct Answer: B. Z-test for large samples; T-test for small samples
Explanation: The z-test is used for large samples, while the t-test is used for small samples.

Q562: What is the first step in testing a hypothesis for a single sample?
A. Collect data
B. Specify the null hypothesis
C. Analyze the data
D. Draw conclusions

Correct Answer: B. Specify the null hypothesis
Explanation: The first step in hypothesis testing is to clearly state the null hypothesis.

Q563: When is a one-tailed test used in hypothesis testing?
A. When testing for any difference
B. When testing for a difference in one direction
C. When the sample size is large
D. When there are multiple hypotheses

Correct Answer: B. When testing for a difference in one direction
Explanation: A one-tailed test is used when the hypothesis specifies a direction of the difference.

Q564: What should you do if the calculated z-value is greater than the critical value from the z-table?
A. Accept the null hypothesis
B. Reject the null hypothesis
C. Re-evaluate your data
D. Collect additional samples

Correct Answer: B. Reject the null hypothesis
Explanation: If the calculated z-value exceeds the critical value, it indicates a significant difference, leading to rejection of the null hypothesis.

Q565: If the population variance is known, what is the first step to follow in hypothesis testing?
A. Collect sample data
B. Specify the null hypothesis
C. Analyze the variance
D. Calculate the sample mean

Correct Answer: B. Specify the null hypothesis
Explanation: The first step is to clearly define the null hypothesis for the testing process.

Q566: When the population standard deviation is unknown, what should be used for hypothesis testing?
A. Z-statistic
B. T-statistic
C. Chi-square statistic
D. F-statistic

Correct Answer: B. T-statistic
Explanation: When the population standard deviation is unknown, the t-statistic is used for hypothesis testing, especially for small samples.

Q567: What is the criterion for using the z-statistic?
A. Sample size must be greater than 50
B. Population variance must be known
C. Sample size must be less than 30
D. Population mean must be known

Correct Answer: B. Population variance must be known
Explanation: The z-statistic is applied when the population variance is known and the sample size is large ($n \geq 30$).

Q568: What is the first step when testing a hypothesis if the population variance is not known?
A. Specify the alternative hypothesis
B. Specify the null hypothesis
C. Collect data from multiple sources
D. Calculate the sample standard deviation

Correct Answer: B. Specify the null hypothesis
Explanation: The first step is to clearly state the null hypothesis before proceeding with any calculations.

Q569: What is the degrees of freedom for a t-test with a sample size of 25?
A. 24
B. 25
C. 23
D. 26

Correct Answer: A. 24
Explanation: The degrees of freedom for a t-test is calculated as n - 1, so for a sample size of 25, it would be 24.

Q570: In Example 3, what was the null hypothesis regarding the mean aspirin content?
A. The mean aspirin content is greater than 10 mg
B. The mean aspirin content is less than 10 mg
C. The mean aspirin content is 10 mg
D. The mean aspirin content is not specified

Correct Answer: C. The mean aspirin content is 10 mg
Explanation: The null hypothesis in Example 3 stated that the mean aspirin content is 10 mg.

Q571: In Example 3, what was the sample size used for testing the mean aspirin content?
A. 25
B. 30
C. 100
D. 50

Correct Answer: C. 100
Explanation: The sample size used in Example 3 was 100 tablets.

Q572: What type of test was used in Example 4 to determine life expectancy?
A. One-tail test
B. Two-tail test
C. Chi-square test
D. Z-test

Correct Answer: A. One-tail test
Explanation: Example 4 required a one-tail test since it was testing for an increase in life expectancy.

Q573: What is the formula for the z-statistic when population variances are known?
A. $z = \frac{x_1 - x_2}{s\sqrt{n}}$
B. $z = \frac{x}{\sigma/\sqrt{n}}$
C. $z = \frac{x_1 - x_2}{s_1^2/n_1 + s_2^2/n_2}$
D. $z = \frac{(x_1 - x_2)}{(s_1^2/n_1 + s_2^2/n_2)^{1/2}}$

Correct Answer: D. $z = \frac{(x_1 - x_2)}{(s_1^2/n_1 + s_2^2/n_2)^{1/2}}$
Explanation: This formula is used to calculate the z-statistic when the variances of both populations are known.

Q574: In hypothesis testing, what does the rejection region indicate?
A. The area where the null hypothesis is accepted
B. The area where the null hypothesis is rejected
C. The confidence interval
D. The range of sample means

Correct Answer: B. The area where the null hypothesis is rejected
Explanation: The rejection region is the range of values that leads to the rejection of the null hypothesis.

Q575: What is the main focus of a contingency table?
A. Numerical data analysis
B. Qualitative data analysis
C. Predicting future outcomes
D. Time series analysis

Correct Answer: B. Qualitative data analysis
Explanation: Contingency tables are used to analyze qualitative data by arranging it into categories.

Q576: Which test is commonly used for assessing the independence between qualitative variables?
A. T-test
B. ANOVA
C. Chi-square test
D. F-test

Correct Answer: C. Chi-square test
Explanation: The chi-square test is a non-parametric test used to evaluate the independence of qualitative variables.

Q577: In the chi-square test, what do the variables represent in a two-way table?
A. Continuous measurements
B. Categorical classifications
C. Time intervals
D. Numerical averages

Correct Answer: B. Categorical classifications
Explanation: In a two-way table used for the chi-square test, the variables represent categorical classifications.

Q578: What hypothesis is typically tested using a chi-square test of independence?
A. The means of two populations are equal
B. The variance of two populations is equal
C. Two categorical variables are independent
D. The distribution of a variable is normal

Correct Answer: C. Two categorical variables are independent
Explanation: The chi-square test is used to test whether two categorical variables are independent from one another.

Q579: In the provided example, how many categories are there for the father's occupation?
A. Three
B. Four
C. Five
D. Six

Correct Answer: C. Five
Explanation: The example divides the father's occupation into five categories: unemployed, unskilled labour, skilled labour, self-employed, and professional.

Q580: What is the significance of using non-parametric tests for qualitative data?
A. They require normally distributed data
B. They do not rely on parameter estimates
C. They are used for small sample sizes only
D. They are always more accurate than parametric tests

Correct Answer: B. They do not rely on parameter estimates
Explanation: Non-parametric tests, like the chi-square test, do not assume any specific distribution

or require parameter estimates, making them suitable for qualitative data.

Q581: Which of the following statements about chi-square tests is true?
A. They can only be applied to quantitative data.
B. They assess the relationship between three variables.
C. They compare the observed frequencies with expected frequencies.
D. They require a large sample size for accurate results.

Correct Answer: C. They compare the observed frequencies with expected frequencies.
Explanation: Chi-square tests assess how the observed frequencies of categorical data compare to the expected frequencies if the variables were independent.

Q582: What types of categories are used to classify families in the provided example?
A. Economic status
B. Number of children
C. Education level
D. Geographic location

Correct Answer: B. Number of children
Explanation: Families are categorized based on the number of children they have: no child, one child, two children, three children, and more than three children.

UNIT 18

PRESENTATION OF RESULTS

Q583: What is a primary purpose of research reports?
A. To entertain the audience
B. To communicate findings to peers
C. To summarize personal opinions
D. To serve as advertisements

Correct Answer: B. To communicate findings to peers
Explanation: Research reports are essential for sharing research findings with peers, enabling them to assess the value of the research work.

Q584: According to Busha and Harter (1988), research reports must be:
A. Brief and informal
B. Complete, well-organized, and carefully drafted
C. Open to interpretation
D. Focused only on data presentation

Correct Answer: B. Complete, well-organized, and carefully drafted
Explanation: Well-organized and carefully drafted reports are necessary for effectively communicating research findings.

Q585: What type of research report is typically submitted for the award of a Master of Philosophy degree?
A. Technical report
B. Doctoral dissertation
C. Student research report
D. Corporate research report

Correct Answer: C. Student research report
Explanation: Research reports by students or research fellows are often submitted to fulfill degree requirements, including for the Master of Philosophy.

Q586: What is the main focus of applied research and development efforts?
A. Theoretical knowledge
B. Achieving social goals
C. Personal interests of researchers
D. Historical analysis

Correct Answer: B. Achieving social goals
Explanation: Applied research and development aim to meet targets in scientific, industrial, and economic growth, often with a focus on social goals.

Q587: In corporate and research complex settings, who typically prepares research reports?
A. Individual researchers
B. A team led by a team leader
C. Administrative staff
D. Outsourced writers

Correct Answer: B. A team led by a team leader
Explanation: Research reports in these settings are usually prepared collaboratively by a team, often led by a designated team leader.

Q588: What is the purpose of interim or status/stage reports in long-duration research projects?
A. To provide final results
B. To summarize past research
C. To disseminate preliminary results
D. To propose new research ideas

Correct Answer: C. To disseminate preliminary results
Explanation: Interim reports are created to share preliminary findings during the course of a long-term research project.

Q589: What type of reports may result from research sponsored by industries or universities?
A. Opinion papers
B. Project team reports
C. Historical analyses
D. Literature reviews

Correct Answer: B. Project team reports
Explanation: Sponsored research typically results in reports prepared by the project team working on product development or problem-solving.

Q590: Which of the following types of research outputs is primarily produced to announce preliminary results?
A. Final reports
B. Research papers
C. Promotional literature
D. Technical manuals

Correct Answer: B. Research papers
Explanation: Research papers are often used to share preliminary findings through publication in research journals.

Q591: What type of research reports may be necessary for technology transfer from research to commercial organizations?
A. Summary reports
B. Promotional literature
C. Opinion pieces
D. Interim reports

Correct Answer: B. Promotional literature
Explanation: Various forms of promotional literature are essential for technology transfer from research institutions to commercial entities.

Q592: What is the purpose of the letter of transmittal in a proposal?
A. To provide a detailed analysis of the problem
B. To highlight the problem and propose working conditions
C. To summarize the entire proposal
D. To list the personnel involved in the project

Correct Answer: B. To highlight the problem and propose working conditions
Explanation: The letter of transmittal introduces the proposal, identifies the problem, and offers to address it under mutually agreed conditions.

Q593: Which component of a proposal succinctly states the problem and includes relevant submission details?
A. Executive Summary

B. Title Page
C. Table of Contents
D. Statement of Request

Correct Answer: B. Title Page
Explanation: The title page includes a succinct statement of the problem, submission details, and other identifying information.

Q594: Why is the executive summary particularly important in a proposal?
A. It provides detailed methodologies
B. It is the first section reviewed by busy executives
C. It lists all personnel involved
D. It outlines the project's duration

Correct Answer: B. It is the first section reviewed by busy executives
Explanation: The executive summary is crucial as it summarizes the proposal for busy executives who may not read the entire document.

Q595: When should a table of contents be included in a proposal?
A. For proposals less than five pages
B. Only if the proposal is informal
C. In proposals longer than five to six pages
D. Whenever the executive summary is present

Correct Answer: C. In proposals longer than five to six pages
Explanation: A table of contents is necessary for longer proposals to help navigate the document.

Q596: What does the preliminary section of a proposal state?
A. The methodology and results
B. The subject, scope, purpose, and execution plan
C. The budget and funding sources
D. The personnel involved in the project

Correct Answer: B. The subject, scope, purpose, and execution plan
Explanation: The preliminary section outlines the report's subject, its scope, purpose, and plan for execution.

Q597: Which section of a proposal details the methodology and procedures to be used?
A. Executive Summary
B. Research Process Introduction
C. Facilities
D. Body including the methodology

Correct Answer: D. Body including the methodology
Explanation: This section explains the procedures, equipment, analysis, and other aspects of how the work will be accomplished.

Q598: What should the facilities section of a proposal clearly state?
A. The personnel involved
B. The conclusions drawn
C. The required resources and support facilities
D. The cost estimates

Correct Answer: C. The required resources and support facilities
Explanation: The facilities section specifies the resources needed to execute the proposal, including equipment, literature, and communication facilities.

Q599: What aspect of a proposal is considered the most crucial?
A. Duration of the project
B. Cost and funding
C. Personnel involved
D. Summary of findings

Correct Answer: B. Cost and funding
Explanation: The cost and funding section outlines the financial aspects of the proposal, which are critical for approval.

Q600: Why is the summary and conclusion section important for busy executives?
A. It provides detailed data analysis
B. It helps assess the proposal quickly
C. It lists all project personnel
D. It describes the methodologies used

Correct Answer: B. It helps assess the proposal quickly
Explanation: Busy executives often read the summary and conclusion to quickly evaluate the proposal's relevance and benefits.

Q601: What is the primary purpose of a plan outline in research reports?
A. To serve as a summary of findings
B. To guide the preparation of the final product
C. To list references
D. To present data analysis techniques

Correct Answer: B. To guide the preparation of the final product
Explanation: A plan outline serves as a guide in preparing the final research report, helping to organize materials systematically.

Q602: Which of the following is NOT typically included in the preliminaries of a research report?
A. Title Page
B. Abstract/Synopsis
C. Results
D. Table of contents

Correct Answer: C. Results
Explanation: The results section is not part of the preliminaries; it appears later in the report.

Q603: What does the 'Introduction' section of a research report typically include?
A. Data collection methods
B. Statement of the problem and literature review
C. Statistical presentations
D. Conclusions and recommendations

Correct Answer: B. Statement of the problem and literature review
Explanation: The introduction includes the statement of the problem, theoretical context, purpose of the study, and a review of the literature.

Q604: Which component of the research report provides definitions of key terms?
A. Abstract
B. Description of the Study
C. Summary
D. Bibliography

Correct Answer: B. Description of the Study
Explanation: The Description of the Study section includes definitions of terms as part of the conceptual framework.

Q605: What type of information is presented in the 'Results' section of a research report?
A. Literature review and theoretical context
B. Data tables, figures, and statistical presentations
C. Conclusions and recommendations
D. Author's name and affiliation

Correct Answer: B. Data tables, figures, and statistical presentations
Explanation: The Results section contains the presentation of data, including tables, figures, and statistical analysis.

Q606: In the 'Discussions' section of a research report, which of the following is evaluated?
A. Theoretical framework
B. Support or nonsupport of the hypothesis
C. Methodologies used
D. References cited

Correct Answer: B. Support or nonsupport of the hypothesis
Explanation: The Discussions section evaluates whether the hypothesis is supported or not and discusses implications.

Q607: What is included in the 'Summary' section of a research report?
A. Detailed methodology
B. Brief overview of the main findings
C. References and bibliography
D. Definitions of terms

Correct Answer: B. Brief overview of the main findings
Explanation: The Summary section provides a concise overview of the main findings of the research.

Q608: What is the purpose of the 'Glossary' in a research report?
A. To provide references
B. To explain complex terms used in the report
C. To summarize findings
D. To list authors' affiliations

Correct Answer: B. To explain complex terms used in the report
Explanation: The Glossary serves to clarify complex terms and concepts used in the research report.

Q609: Which section of a research report contains the author's references and citations?
A. Appendix
B. Bibliography
C. Summary
D. Title Page

Correct Answer: B. Bibliography
Explanation: The Bibliography section lists all the references and citations used in the research report.

Q610: What is typically found in the 'Appendix' of a research report?
A. Author's name and contact information
B. Additional material that supports the report
C. Summary of the main findings
D. Abstract of the report

Correct Answer: B. Additional material that supports the report
Explanation: The Appendix includes supplementary material that supports the findings and discussions in the report.

Q611: What is the primary purpose of bibliographical references in research?
A. To summarize the findings of the research
B. To collect information and background knowledge of the research field
C. To provide footnotes and citations
D. To draft the final report

Correct Answer: B. To collect information and background knowledge of the research field
Explanation: Bibliographical references are essential for gathering background information and knowledge pertinent to the research study.

Q612: How are bibliographical references categorized according to their relevance?
A. Primary and secondary sources
B. Directly concerned and peripheral value references
C. Published and unpublished works
D. Journal articles and books

Correct Answer: B. Directly concerned and peripheral value references
Explanation: References are categorized into those that are directly relevant to the research topic and those that are of peripheral value.

Q613: What type of notes should researchers prepare at different stages of their work?
A. Statistical data
B. Subject notes
C. Summary notes
D. Literature reviews

Correct Answer: B. Subject notes
Explanation: Subject notes are ideas or thoughts that researchers should record as topical outlines or descriptive subject presentations.

Q614: What are footnotes in a research report used for?
A. To summarize the entire report
B. To provide citations, comments, and illustrations
C. To list the bibliography
D. To describe the research methodology

Correct Answer: B. To provide citations, comments, and illustrations
Explanation: Footnotes are used for citations, comments, and explanations placed at the end of a page, with indication marks in the body of the report.

Q615: What is emphasized as a hallmark of good writing in research reports?
A. Complexity of language
B. Lucidity and ease of understanding
C. Length of the report
D. Use of technical jargon

Correct Answer: B. Lucidity and ease of understanding
Explanation: Good writing should be clear and easy to understand, facilitating comprehension of the report's content.

Q616: Which aspect of writing is primarily concerned with the meaning of words?
A. Syntax
B. Semantics
C. Diction
D. Grammar

Correct Answer: B. Semantics
Explanation: Semantics deals with the different meanings of words and the appropriate selection of words to convey the intended meaning.

Q617: What does syntactics refer to in writing?
A. The choice of words
B. The rules of grammar
C. The pattern of sentence structure
D. The length of sentences

Correct Answer: C. The pattern of sentence structure
Explanation: Syntactics involves the structure and order of words in sentences to effectively convey ideas.

Q618: Why is grammar important in writing research reports?
A. It determines the length of the report
B. It provides rules for correct writing
C. It adds complexity to the writing
D. It replaces the need for outlining

Correct Answer: B. It provides rules for correct writing
Explanation: Grammar provides the essential rules that guide writers in constructing clear and correct prose.

Q619: What are the two types of drafting outlines mentioned for organizing research reports?
A. Abstract and summary
B. Sentence outline and topical outline
C. Bibliography and references
D. Introduction and discussion

Correct Answer: B. Sentence outline and topical outline
Explanation: The two types of drafting outlines that help in presenting the themes of research reports are sentence outlines and topical outlines.

Q620: Which section of a research report should incorporate all aspects of language and grammar?
A. Title Page
B. Introduction
C. Results
D. Organisation of the Report

Correct Answer: D. Organization of the Report

Explanation: The Organization of the Report should incorporate aspects of language and grammar to ensure clarity and coherence throughout.